AUSTRIAN ECO-LABEL

Introduction

The Austrian Eco-Label was created in 1991 on the initiative of the Federal Ministry of Environment, Youth and Family Affairs (BMUJF). The Eco-Label is a voluntary, seal-of-approval, targeted to both consumers and manufacturers. It is designed to draw consumers' attention to products and services that are "more environmentally friendly as compared to the very harmful effects inflicted by other products fulfilling the same function" (Umweltbundesamt, 1994). The program also seeks to motivate producers and traders to "develop and offer less environmentally-polluting products" (Umweltbundesamt, 1994). In addition to evaluating the environmental impacts of a product, the Eco-Label also certifies the quality of the product, ensuring "a high environmental standard without having to fear a loss of quality or safety" (Umweltbundesamt, 1994).

As of August 1997, product criteria have been developed for 34 product categories under the Austrian Eco-Label. Since 1996, new product categories include tourism, carpets, papers for magazines, and office chairs. Currently, there are a total of 150 products that have been awarded the eco-label, and ten foreign companies that carry the Austrian Eco-Label on their products.

Recent Developments

Austria's ecolabeling scheme operates in conjunction with the European Union's (EU) ecolabeling program. The EU label, however, is not seen as a substitute for the Austrian label. In fact, "as long as product-related market shares and technology developments differ strongly within the large market areas like the EU, we [Austria] are of the firm opinion that it cannot be wise to reject national schemes" (Jakl, 1997). Although criteria for product groups developed under the EU ecolabeling scheme may be integrated into national ecolabeling programs, the EU Eco-label is not be a precondition for receiving the Austrian Eco-Label.

Program Summary

BMUJF, the Federal Environmental Agency (UBA), the Austrian Consumer Association (VKI), and the Austrian Association for the Promotion of Quality (ARGE) are the four primary organizations responsible for administering the Austrian Eco-Label program. The ARGE administers and coordinates with manufacturers wishing to obtain the ecolabel. The other three organizations are involved with criteria development. In addition, several groups -- the Eco-Label Advisory Board and the "expert groups"(one for each product category) -- have been established to assist in the award process. Members of the Advisory Board and the "expert groups" include individuals from the four administrating bodies, as well as people from environmental protection organizations, manufacturing, trade associations, consumer protection organizations, and individual experts.

Product categories are proposed to the ARGE by manufacturers, institutions, and other interest groups. ARGE then prepares a summary of the proposals for BMUJF. Based on assessments of the proposed product groups' overall environmental impacts, the BMUJF decides which product categories will be pursued for the Eco-Label. Once product categories have been selected, the Federal Environmental Agency, the BMUJF, and the Consumer Association jointly develop and propose product criteria. Chaired by the Austrian Consumer Association (VKI), an expert group (with representatives from a wide range of stakeholder organizations) is responsible for discussing proposed criteria and coming to a unanimous decision in passing a draft set of environmental criteria for each product group.

The Eco-labeling Advisory Group approves the draft, which is then subject to a final examination by the Federal Environmental Agency, who approves the product criteria. The criteria are then authorized by the Minister for the Environment and published in the official Federal Environmental Agency gazette, the *Wiener Zeitung*. Usually, criteria are valid for three years unless there has been a major technology revision, in which case criteria may be reviewed before the three years are over. If no manufacturer applies for an ecolabel in a given product group, criteria for that product group may be withdrawn or altered prior to the three years.

The Austrian Eco-Label may be awarded to both products and services and is open to both domestic and foreign producers, who submit applications to ARGE. If the manufacturer is in compliance with the product criteria, a "label utilization contract" is awarded by BMUJF and signed by the producer. Each product label may be used for two years, after which it is eligible for renewal. There is an annual fee for use of the label, which varies depending on the sales of the product; the fee can range from ATS 2,000 ($160.00 US) to an upper limit of ATS 25,000 ($2,000.00 US). If a breach of contract is found, BMUJF has the right to prohibit further use of the label, either temporarily or permanently.

Program Methodology

Product categories are proposed by manufacturers, institutions, and other interest groups to ARGE. Product categories are selected through an evaluation of the environmental impacts of the categories, as well as by stakeholder votes or a legislative body's votes. The program reports, however, that it does not conduct an environmental impact analysis when selecting product categories or in establishing product criteria.

When developing product criteria, the Austria Eco-Label program conducts a life-cycle assessment. In setting its criteria Austria Eco-Label collects information from previous literature and studies pertaining to the product categories, other programs' LCAs, independent testing and auditing, and information from the manufacturers themselves. Products are assessed on an "all-embracing and unified evaluation" of not only the environmental effects of product use but also on the following factors: relative consumption of raw materials and energy during the production process, toxicity of the product's contents, wastes generated during manufacturing as well as disposal, recyclability; quality and safety of the product, usability of the product, and durability

and ease of repair of the product. Additionally, Austria assesses product categories on other factors such as occupational health, human health impacts, the use of animal testing, and general compliance with health, safety and environmental regulations in the country. Austria Eco-Label reports that it does not use SETAC guidelines in its life-cycle assessment.

Other Information

During the past year, Austria Eco-Label has participated in discussions with other European countries to try to harmonize national ecolabeling programs in Europe. Preliminary pilot projects have been established to try to develop unified product categories for three pilot product categories -- vacuum cleaners, coffee machines, and furniture. The aims of this pilot project are to 1) identify the critical steps in the criteria development process (which could lead to mutual recognition among programs); 2) establish what the key elements are in criteria development; and 3) to establish mutually-recognized testing procedures among participating countries.

References

Bundesministerium für Umwelt, 1996, *Fact Sheet, "Certified Products.*"

Bundesministerium für Umwelt, 1996, *Fact Sheet, "Approved Criteria for Awarding the Austrian Eco-Label.*"

Umweltbundesamt, 1994, *The Austrian Eco-Label* (Booklet).

Dr. Thomas Jakl, Bundesministerium für Umwelt, personal communication with Abt Associates, July/August 1997.

Austrian Federal Ministry for Environment, Youth and Family. *Austria's Approach to Environmental Labeling*. Website address: www.bmu.gv.at/bmu/bmu/fachinfo/wum/UWZEnglish.html.

Product Categories

Final Categories

Refrigerators and freezers
Sanitary paper and tissues made of recycled paper
Varnishes and paints
Recycled paper for writing, copying, and EDP purposes (fine paper)
Filing systems made of recycled paper
Exercise books made from recycled paper
Household washing machines
Wood and wooded materials for indoor building purposes
Wooden furniture

Water-soluble varnishes for wooden floors
Water-saving toilet flush tanks for non-chlorinated plastic materials
Individual electronic controls for sanitary facilities
Reprocessing of ink media (toner-modules, ribbon cassettes, ink cartridges)
Saw-chain oil and lubricants
Copying machines
Solar collectors
Wall paints
Products made from recycled paper (e.g., envelopes, etc.)
Detergents for dishwashers
Detergents for manual use
Textile detergents
Printing paper for newspapers mainly made of waste paper
Total chlorine free bleached paper, made from virgin fiber, for non-impact printing (e.g., inkjet and high speed laser printers)
Low pollutant print products (publications)
Wood-based playground equipment for outdoor use
Compostable paper bags for biogenic waste
Tickets for public transport (Go-for-the-Environment Tickets)
Returnable bottles for beverages and liquids
Compostments for cemeteries (e.g., compostable flower arrangements, etc.)
Kitchen rolls, paper towels and cleaning cloths made out of recycled paper
Cleaning agents
Tourism enterprises (e.g., hotels, restaurants, etc.)
Carpets
Paper made from recycled materials for magazines
Office Chairs

Categories Under Consideration

Thermal insulation
Heating systems
Energy supplying systems

CANADA'S ENVIRONMENTAL CHOICE^{M} PROGRAM: THE ECOLOGO^{M}

Introduction

"The mission of the Environmental Choice Program (ECP) is to reduce the stress on the environment by encouraging the demand for and supply of environmentally responsible products and services"(*Canada's Environmental Choice Program*, 1996). ECP was created as a voluntary ecolabeling program by Environment Canada (the environment department of the Government of Canada) in 1988. In 1995, TerraChoice Environmental Services Inc., a Canadian private sector company, assumed management of the ecolabeling program, though Environment Canada still retains ownership.

ECP has published 50 final guidelines, has generated 39 certification criteria documents through the Panel Review and Certification Process (see below), and has awarded the EcoLogo to over 1,750 products, services, technologies, and events as an indication of their positive environmental attributes. It has received a generally favorable response from consumers and industry -- a June 1996 survey found that one in five Canadians said that they or someone in their household had purchased a product carrying the EcoLogo in the past year, and that two in three Canadians said they had confidence in the EcoLogo as a buying guide. Additionally, in a 1995 survey, 80 percent of marketing managers said they expected some increase in consumer demand for information on environmental attributes of products.

Recent Developments

ECP has undergone several significant changes in the past few years. As mentioned above, ECP management was transferred from the government to TerraChoice, a private consulting company. ECP has also begun a significant marketing program; they publish newsletters, distribute an ecobuyer guide, and staff attend numerous trade shows. Not only has their marketing increased, but it has also shifted targets; whereas retail consumers were the focus in the past, they are now shifting their aim upstream to, for example, industry groups, school boards, and private institutions. ECP has also increased use of their Panel Review and Certification Process for awarding labels. Described in detail in the summary section below, this differs from most other programs in that it will award a label to a single product that is particularly innovative without previously creating a product category and establishing award criteria. This methodology is very different from the conventional supply-side approach of most seal-of-approval programs that create standards for groups of products at a time.

Program Summary

TerraChoice is responsible for selecting product categories, and does so based on either supply- or demand-side indicators. The supply-side management approach, one of the most commonly used by ecolabel programs, selects product categories based on the volume of the particular product in the marketplace and the potential for environmental improvement. The demand-side approach,

unique to the ECP program, allows manufacturers to request a label for a particular product (most other programs will field requests for product categories but not for specific products).

Criteria for the category are developed using a Technical Briefing Note (TBN) characterizing the lifecycle of a product. A Review Committee, including experts from various fields, then reviews the draft. Upon completion of the proposed guideline by the Review Committee, there is a four-to-eight-week public review period. While they are not formally required to reply, TerraChoice responds to most comments. TerraChoice officials, along with the Review Committee, revise the draft guidelines based on the public comments received. Upon acceptance by the government, the final guideline is released.

Manufacturers can then apply for an ecolabel for a product meeting the published criteria for the relevant product category. Applicants undergo a confidential certification and audit process conducted by TerraChoice. Applicants are responsible for the cost of verifying that the criteria are met by their product and that they meet general licensing requirements (e.g., compliance with applicable environmental, safety, and performance legislation). These costs can be between $750 ($542 US) to $2,500 ($1,807 US) Canadian dollars based on the certification criteria and the requirement for site auditing.

Companies can also apply for certification for a product for which criteria have not been developed, referred to as the Panel Review and Certification Process. Certification of applicants with unique or niche products or services for which product category standards have not been established are recommended. An expert panel reviews each specific product application. While manufacturers are not charged a higher fee for this process, it tends to be more labor intensive than the process for technical guidelines; the applicant must present a large amount of technical and marketing information documenting its environmental excellence. If several similar products apply for the award through the Panel Review and Certification process, TerraChoice may develop a set of criteria for the product category as described above in the supply-side approach.

Once a manufacturer has been awarded use of the ecolabel, the company enters into a contract with TerraChoice. The annual fee is based on gross annual sales, and can be anywhere between $350 and $10,000 per license. Compliance is ensured through an annual statement submitted by the manufacturer confirming continued compliance, and through a three-year review of guidelines. In addition, compliance monitoring is conducted and paid for by TerraChoice, and includes location visits, product testing, and records verification.

Program Methodology

TerraChoice is responsible for selecting product categories, and does so based on either supply-or demand-side indicators. The supply-side management approach, one of the most commonly used by ecolabel programs, selects product categories based on the volume of the particular product in the marketplace and the potential for environmental improvement. The demand-side approach, unique to the ECP program, allows manufacturers to request a label for a particular product

without the development of overall labeling criteria. If several manufacturers express interest in certification of the product, TerraChoice then considers the development of labeling criteria for the whole class of products. These are known as Technical Guidelines.

Technical Guidelines for the category are developed using a Technical Briefing Note (TBN), which looks at the environmental impacts of the product throughout its lifecycle, as well as market, economic, and technical information about the product category. In developing the Technical Guidelines, information from public sources is gathered and evaluated. The Review Committee then reviews the Guidelines for scientific validity.

Companies can also apply for certification for a product for which criteria have not been developed, referred to as the Panel Review and Certification Process. Certification of applicants with unique or niche products or services for which product category standards have not been established, and which represent a clear and significant reduction in environmental impacts, are recommended. An expert panel reviews each specific product application. While manufacturers are not charged a higher fee for this process, it tends to be more labor intensive than the process for technical guidelines; the applicant must present a large amount of technical and marketing information documenting its environmental excellence. If several similar products apply for the award through the Panel Review and Certification process, TerraChoice may develop a set of criteria for the product category as described above.

Other Information

ECP is sensitive to the constraints of small and medium-sized businesses. Because its fee is based on sales, the minimum fee is applied to businesses with smaller sales.

The program is informally connected to several governmental and non-governmental procurement programs. In part, because the government owns the program, the ecolabel is used for government procurement; most departments in the government are required to be "green," creating a large market for products with the label. Additionally, the Green Procurement Institute is a Canadian organization set up to encourage green procurement. They work closely with ECP and provide a wealth of information to retailers and governments interested in green procurement. The EcoBuyer newsletter, mentioned above, is an ECP creation used to reach retailers and purchasing departments in private companies to inform them about ECP-labeled products. The ECP reports that, in addition to specifying labeled products, some retailers rely on the criteria outlined by the Canadian ecolabel but use their own verification process.

ECP is also active in coordination with other non-Canadian labeling bodies. The program is a member of the Global Ecolabeling Network (GEN), and participates in International Standards Organization (ISO) activities. ECP plans to incorporate the ISO 14020 and 14024 standards once they are final. ECP representatives advocate "consistency, high credibility, and mutual respect between existing and proposed programs," and are working on mutual recognition with other programs. To this end, ECP has exchanged information with both the Taiwan program and the

US Green Seal program. Specifically, they are working toward mutual recognition with Taiwan through standardization of operations based on ISO standards, mutual recognition of non-product-related impacts, and cooperation in auditing, verification and testing. While the panel review process was not specifically designed to address these issues, it is a useful process for recognizing and awarding labels to products from other countries based on their environmental leadership.

Additionally, TerraChoice, acting as a privately hired consulting company, has contracts with both India and Mexico. While India already has a program structure set up, they have sought TerraChoice advice and recommendations regarding potential program revisions. Mexico has sought TerraChoice assistance in assessing the merit of, and issues relating to, the development of a Mexican environmental labeling program.

While completely separate from ECP, another labeling program is being formed by TerraChoice and the Ontario Centre for Environmental Technology Advancement called the Environmental Technology Verification (ETV) Program. In its pilot stage, this program is being coordinated with the U.S. Environmental Protection Agency (EPA) National Environmental Technology Strategy and the California EPA. ECP expects to issue "certificates of authenticity" to environmental technologies under the new program. The program is voluntary, and will provide a set of standards across Canada and the US.

References

Canada's Environmental Choice Program, October 1996.

The Environmental Monitor, June 1996.

Insight Canada, February 1995.

Canada's Environmental Choice Program. "Environmental Choice Program, Annual Report." 95/96.

Canada's Environmental Choice Program. "Environmental Technology Verification (ETV) Program." May, 1997.

Global Ecolabeling Network, *GENews*, March 1997, Issue No. 2.

Binette, Sherry. TerraChoice Environmental Services Inc. Personal communication with Abt Associates. Summer 1997.

Polak, John C. TerraChoice Environmental Services Inc. Personal communication with Abt Associates. Summer 1997.

Bozowsky, Evan. TerraChoice Environmental Services Inc. Personal communication with Abt Associates. Summer 1997.

Canada's Environmental Choice Program. *ECP-57 Industrial and Commercial Cleaners*, March 1, 1997.

Product Categories (number of awarded products in parentheses)

Final Categories

Automotive engine oil (8)
Products made from recycled plastic (2)
Specialty batteries (4)
Products made from recycled rubber
Water-borne surface coatings (31)
Fine paper from recycled paper
Miscellaneous products from recycled paper (35)
Newsprint from recycled paper
Solvent-borne paints (7)
Diapers (1)
Composting systems for residential waste (1)
Automotive fuels (6)
Reusable utility bags (5)
Energy-efficient lamps
Water conserving products (5)
Commercial car wash services
Automobile service stations
Autobody, collision repair, and refinishing services
General purpose cleaners (4)
Domestic water heaters
Building materials: acoustical products
Dry cleaning services
Building materials: thermal insulation (5)
Remanufactured printing cartridges (1)
Engine coolant concentrate
Adhesives
Sealants and caulking compounds
Photocopiers (1)
Printing inks

Gypsum wallboard
Driveway sealers (1)
Photofinishing services
Industrial and commercial cleaners
Lithographic printing services (1)
Toilet tissue (1)
Kitchen towels
Facial tissue
Table napkins
Hand towels
Rechargeable consumer batteries (2)
Office furniture and panel systems
Recycled water-borne surface coatings
Biodegradable, non-toxic chain and saw lubricants
Polyethylene plastic film products (3)
Demountable partitions
Facsimile machines (1)
Marine inboard
Marine foul release coatings (2)
Business forms and other converted paper products
Envelopes

Guidelines Under Development

Biodegradable non-toxic hydraulic fluids
Industrial and commercial cleaners
Resilient flooring
Coated paper

Categories Under Consideration

Wood shakes and shingles
Carpets
Carpet insulation
Pre-finished hardwood flooring
Asphalt shingles
Steel-based roofing products
Fibreboard
Concrete-based products
Particleboard

Panel Review Criteria

Clothing made from certified organic cotton
Source reduced plastic cheese packaging film
Organic turf management service

Source reduced plastic petri dishes
Fire door kit for retrofit projects
Battery powered lawnmower
Cotton swabs
Pressed firewood logs
Technology for industrial laboratory extractions
Energy efficient tires
Laser jet-desk top printers
Household washing machines
Household dishwashers
Packaging management system
Alternative water well rehabilitation technology
Alternative source electricity generation by utilities
Paint and varnish remover
Outdoor furnishings manufactured from waste-wood
Packaging management system
Synthetic industrial lubricant
Flushable and biodegradable sanitary napkin
Particleboard manufactures from an agricultural fibre
Advanced wastewater treatment system
Re-refined industrial lubricating oil
Pouch packaging system for liquid milk
Biodegradable bicycle chain oil
Alternative source electricity generation from biomass utilities
Residential homes
Resin used in the manufacture of compost bags
Remanufactured mattresses
Outdoor community events
Electronic equipment recovery service
Fishing sinkers
Component pulp
Fibreboard manufactures from recycled resources
Warming cooking gel
Office facilities
Anticorrosion chemical for vehicles
Liquid laundry detergent and fabric softeners

In the near future, the TerraChoice website will include continuously updated information on the ECP, a listing of all ECP certification criteria documents, and directions on how to order/obtain ECP documents. The website address is: www.terrachoice.ca.

CHINA'S ECOLABELING PROGRAM

Introduction

In May 1994, the Chinese government established the China Certification Committee for Environmental Labeling Products (CCEL) to administer a third-party certification program under the direction of the China State Bureau of Technology Supervision (CSBTS) and the National Environmental Protection Agency (NEPA). The establishment of CCEL was prompted by several factors, including the 1992 UN Conference on Environment and Development, after which the Chinese government declared environmental stewardship a high priority. Trade issues also influenced the government's decision to establish a national environmental labeling program since some exports, such as refrigerators and wallpaper, had been adversely affected in the international market by the lack of such a product certification program. In fact, some provinces and domestic manufacturers had already designed their own labeling programs to address these issues.

The purpose of China's environmental labeling program is to "reduce domestic environmental stress of products by using market forces as a means to supplement mandatory environmental laws." In addition, the program strives to increase public awareness of the environmental impact of consumer products, and to promote the trade of environmentally preferable products.

Program Summary

CCEL, chaired by the Administrator of NEPA, consists of 16 government officials and eight members from various professional disciplines and stakeholder groups including environmental science, economics, quality standards organizations, consumer associations, and environmentalists. Its role is to define and administer the policy, principles, and rules of the environmental labeling program. CCEL reports to CSBTS and NEPA, and relies on a small Secretariat, seated in NEPA, to handle the day-to-day activities of the program.

China's environmental certification process begins with proposals for product categories, which may be submitted to the Secretariat by any interested party. The Secretariat reviews the proposed product category and submits its recommendations to CCEL, which then accepts or rejects the proposal. This decision is finalized only after approval by both NEPA and CSBTS.

Once a new product category is approved, the Secretariat delegates the task of drafting the new product criteria to a private standard-setting organization. This draft is edited by the Secretariat through a multi-party consultation process involving relevant experts and manufacturers. These criteria are then submitted to NEPA for approval and release to the public.

Manufacturers may then apply for product certification. To be eligible, manufacturers must be legally registered with the appropriate government agency, meet all applicable product quality standards, satisfy national and local pollution emission requirements, and must not have been fined or punished by the national or local environmental protection agency for one year prior to the application submission.

Eligible manufacturers begin the certification process by submitting an application to their local Environmental Protection Agency. The agency conducts a preliminary review of the product and submits its findings along with the original application to CCEL. A CCEL inspection team then conducts a site visit to examine both the product and production processes. In addition, product samples are tested at a separate laboratory facility. Reports of the inspection and testing procedure, along with the application, are submitted to the Secretariat, which reviews the documents and gives its comments to CCEL. CCEL will either convene a plenary meeting or distribute the application among members to make the final decision. This decision is then approved and announced by NEPA and CSBTS.

Award recipients sign a three-year contract with the CCEL Secretariat, which grants them license to use the CCEL seal of approval, given continued environmental compliance. Compliance is ensured through annual or biannual inspections performed by the local environmental protection agency.

There are fees for the application process, site inspection and product testing, and product approval. In addition, there is an annual license fee for use of the label. This fee is calculated according to a matrix incorporating product sales, the nature of the product, and manufacturer size. Such scaling helps make the label accessible to large and small manufacturers alike.

Program Methodology

Selection of product categories is based on several factors that reflect the program's goal of reducing environmental degradation. The program gives preference to products that have traditionally had significant environmental impact and for which advances in the manufacturing process can bring about the reduction of such impact. In addition, products must be closely related to people's daily lives. This condition exists for two reasons: first, the widespread exposure of frequently-used products helps to raise consumer awareness of environmental impact; second, even small reductions in the purchase of widely-used products can result in a large reduction in environmental impact. Low-toxic, low-emission, and energy-saving products that themselves stimulate the development of new technology and new products are favored, as well as products that are covered by foreign environmental labeling programs or contribute to global environmental protection.

CCEL consults other environmental labeling programs in the setting of its own product criteria. Product criteria are formulated to reflect four major considerations. First, products must meet all applicable quality, safety, and hygiene standards, as stated by law. Second, labeled products must minimize their potential environmental impact. Third, the criteria should reflect both the local conditions in China. Finally, the criteria should be easily understood by the average consumer.

References

"*ECOLABELING: Its Implications for China*." [Online report]. URL: http://iisd1.iisd.ca/trade/cciced/ecochina.htm

Heinke, Gary W. et al., *Final Report: Development of an Eco-label Certification Programme for Hong Kong/ RC96-19*. Hong Kong: Research Centre of the Hong Kong University of Science and Technology, June 1996.

Product Categories

Final Categories (as of December 1994)

Domestic freezing appliances
Gas dispersed products
Degradable film
Lead-free automobile petroleum
Water-based paint
Toilet paper
Silks
Mercury-free, cadmium-free, and lead-free rechargeable batteries

CROATIA'S ENVIRONMENTAL LABEL

Introduction

Croatia's Environmental Labeling program was established to "stimulate the development of new technologies, the production and consumption of environmentally friendly products, the reduction of environmental pollution, and rational resource and energy management." The program is also intended to provide consumers with a guide to make the "best choice" in terms of environmental protection. Run by the State Directorate for Environment in Croatia, the program is positive and voluntary.

To date, Croatia's program has developed criteria for 33 product categories, and the Label has been awarded to products in 15 of these categories.

Program Summary

Croatia's Environmental Labeling program is administered by the State Directorate for Environment and is run by an expert institution. An appointed Jury, however, makes all decisions regarding the Label. The Jury is appointed by the Director of the State Directorate for Environment, and is composed of five members, including representatives from the State Directorate for Environment, the State Bureau for Standardization and Metrology, industry, trade groups, experts in environmental protection, and non-governmental environmental associations. Each Jury member serves for two years.

The Jury selects product categories that have some adverse effect on the environment. Manufacturers can propose product categories.

Product criteria are established by the expert institution for each product category. Criteria take into consideration all stages of the product's life cycle and all possible negative impacts during every stage of a product's life, from its production to its disposal. In particular, criteria are developed so that awards can be given to products:

> that endanger the environment to a lesser extent than other equivalent products,
> that can be reused,
> that contain replaceable parts,
> that reduce harmful emissions to the environment during their use, and
> whose manufacturer uses natural resources reasonably.

The development process involves the participation of experts and public stakeholders. The Jury makes the final decision on selecting product criteria. The product criteria are valid for a specific period of time that is determined for each set of criteria. At the end of the period, the Jury reviews

the criteria and determines whether the criteria are obsolete, or if they can be extended without revision.

Manufacturers of consumer goods submit applications to the State Directorate for Environment. It is the Jury's decision as to whether to forward the application to the expert institution. The expert institution conducts an audit, before and during which the following are collected or performed: product quality certificate; list of raw materials; description of the technical process; description of technological modifications; power supply improvements; choice of raw materials; comparison between the product and similar products in the Croatian market; water resource permit and waste water quantitative analysis; analysis of the product's impact on water regarding, among other things, biodegradability; outcome of examining the working environment and equipment; description of waste disposal methods; and air quality impact assessment. From the information collected during the audit, the expert institution then issues an opinion on whether or not to award the Environmental Label. The Jury evaluates the information collected during the audit to determine whether or not the product is in line with the product criteria and valid regulations and standards. The Jury makes the final decision on awarding the Label.

References

Preradović, Nevenka. State Directorate for Environment, Republic of Croatia. Personal communication with Abt Associates. Summer 1997.

State Directorate for Environment, Republic of Croatia. *Environmental Label of the Republic of Croatia*. Summer 1997.

State Directorate for Environment, Republic of Croatia. *List of Product Categories for Which the Specific Criteria are Available*. Summer 1997.

State Directorate for Environment, Republic of Croatia. *Specific Criteria for Product Groups for the Environmental Label of the Republic of Croatia*. Summer 1997.

Product Categories

Final Categories

- Returnable paper packaging
- Returnable glass packaging
- Returnable plastic packaging
- Returnable plastic containers
- Returnable metal packaging
- Waste paper collection
- Waste glass collection
- Waste plastic collection
- Waste metal collection

Waste rubber collection
Waste oil collection
Scrap paper products
Scrap glass products
Scrap plastic products
Scrap rubber products
Scrap wood products
Carbon dioxide (CO2) from fermentation waste
Asbestos-free clutch linings
Asbestos-free brake linings
Matches free from toxic substances
Fire lighting material free from hazardous substances
Emulsifiers and dispersers of oil spills on water, free from hazardous substances
Hygienic litter for pets free from hazardous substances
Funeral equipment free from harmful substances
Retreaded tires
Reusable ribbon cassettes
Recovered toner cartridges
Water dispersive polymeric coatings
Water-based adhesives
Lubricating oil for motor saw chains
Linen towel on the rail
Paper products for packaging
Detergents

THE CZECH ECOLABEL

Introduction

The Czech Republic environmental labeling program was initiated by the Resolution of the Czech Republic in 1993 and was started in 1994. It organizes its basic principles around the EU guidelines. "The primary objective of the Czech Eco-labeling Program is to encourage environmental protection via the production and utilization of products which have a reduced environmental impact." The program is voluntary in nature, and supports credibility, transparency and public participation as primary principles. It also looks to provide equal access for domestic as well as imported producers. The program, to date, has announced 17 categories of products and has awarded labels to 198 products from 29 companies.

Program Summary

The program is composed of two primary organizing bodies: the Board of the Czech Eco-labeling Program and the Czech Ecological Institute Agency. The Board is an advisory body to the Minister of the Environment and administers the program. It is composed of experts from government, research, quality testing authorities, and environmental and consumer organizations as appointed by the Minister. The Board assesses categories and criteria for products and submits suggestions for revisions of the guidelines. The Minister then awards the right to use the ecolabel and approves guidelines. The Minister also established and financially supports the Agency. In conjunction with the testing authorities and the Czech Environmental Inspection Division, the Agency is responsible for examining applications with regard to compliance to standards.

Draft guidelines for product criteria are prepared by an ad hoc group of experts and submitted to the Board. Manufacturers are closely involved with the process in order to encourage product design and development improvements. Criteria are revised every two years.

Applicants may then submit an application to the Agency for their product. An initial registration fee is collected by the Agency. If a label is awarded, the manufacturer enters into a licensing agreement with the Agency and pays a flat fee of 20,000 CZK. During this two-year contract, the Agency ensures that the manufacturer meets the requirements.

Program Methodology

Draft guidelines for product criteria are prepared by an ad hoc group of experts and submitted to the Board. These environmental criteria are developed using a "cradle-to-grave" assessment. Manufacturers are closely involved with the process in order to encourage product design and development improvements.

Other Information

The Czech environmental labeling program is part of the EU environmental labeling program and works toward harmonization with other countries through the EU framework. The Czech program organized a seminar titled "Eco-labelling in the Czech Republic - Harmonisation with the European Union." In addition, 41 percent of the companies awarded labels by the program are foreign-based.

References

Ministry of the Environment of the Czech Republic. *Eco-labelling in the Czech Republic*. February 1997.

Product Categories (number of awarded products in parentheses)

Final Categories

Thermal insulation made from used paper (1)
Lubricating oil for the cutting edge of chain saws
Textile detergents
Water dilutable paints (20)
Gas-fueled hot-water boilers with atmospheric burners (11)
Gas-fueled hot-water boilers with compressed air burners (6)
Liquid cleaning agents (1)
Water dilutable adhesives and sealants (3)
Hygienic paper made from recycled paper
Graph paper made from recycled paper
Gas-fueled flow-through hot-water boilers up to an output of 50 kW (5)
Wood-based agglomerated materials and products
Hot-water boilers and local solid-fuel units
Briquettes made from wood waste (1)
Hydraulic fluids
Gas-fueled light and dark infra-red radiators
Surfactant-based washing cosmetics

THE NORDIC COUNCIL'S NORDIC SWAN LABEL

Introduction

In 1989, the Nordic Council of Ministers introduced a voluntary and neutral seal-of-approval certification program know as the Nordic Swan. Currently, Norway, Sweden, Finland, Iceland, and Denmark are participating in the program. The program was introduced in an attempt to unify the emerging ecolabeling programs that were appearing throughout the Nordic countries. The Nordic program is noteworthy because of its novel administrative structure. The Nordic Ecolabelling Board acts under the Nordic Council of Ministers and makes final program-related decisions. The participating national organizations propose new product categories, assist the Board in establishing award criteria, grant licenses, and market the program.

The Nordic environmental label is an "independent label which guarantees a certain environmental standard. Only products which satisfy strict environmental requirements on the basis of objective assessments will be allowed to display the environmental label." The label is intended to provide consumers with guidance in choosing products least hazardous to the environment, to stimulate manufacturers to develop products and processes that are better for the environment, and to use market forces as a complement to environmental legislation.

A self-assessment of the program found that the "Nordic Eco-Labelling system - the 'Swan' symbol - is a fairly successful one, commanding a high level of respect among consumers and producers." A consumer survey conducted in December 1996 found that 80 percent of Norwegian customers knew that the Swan was the official environmental label, and 79 percent said that they prefer products labeled with the Swan. The widespread use of the Swan label on the most common cleaning products has contributed to the label's visibility.

As of July 1997, criteria for 42 product categories had been established, proposed criteria had been sent out for review for four product categories, criteria were under development for eight, and preliminary studies were being conducted for another four. Licenses have been awarded to over 350 companies, and over 1,200 products currently carry the Nordic Swan logo. Of the licenses awarded, roughly 20 percent are from non-Nordic countries. Most of the foreign products carrying the Swan label are paper products; however, computers and photocopiers also carry the label. The number of products to which the Nordic Swan has been awarded has steadily increased over time, although when the paper criteria were made stricter in mid-1997, over 100 product licenses were withdrawn. Given that the new criteria were available six months prior to the change, about half the companies had already reapplied and re-qualified for the Swan logo.

Recent Developments

The most important change in the Nordic Swan program is the recent addition of Denmark. Denmark has been a member of the Nordic Council since its foundation in the 1950s; however, when the Nordic Council established the Swan program Denmark was the only Nordic member of

the EU. Rather than adopting the Swan program, it chose to act as an observer and joined the newly formed EU ecolabel program instead. Because the development of the EU ecolabel program has not progressed as was anticipated, the Danish parliament decided to join the Nordic Swan program in 1997.

Another recent development is the thorough evaluation of the ecolabeling system ordered by the Nordic Council of Ministers in 1994. The results of the evaluation pointed out several inherent conflicts within the Nordic Council's system, and proposed specific changes with which to make improvements. These proposed changes included: 1) defining environmental objectives more clearly, 2) reinforcing activities at the Nordic level, and 3) improving the ability of central management to control the program's objectives.

Program Summary

The Nordic Swan program is administered in Norway, Sweden, Finland, Iceland, and Denmark by national boards, coordinated by the Nordic Ecolabelling Board, which in turn acts under the authority of the Nordic Council of Ministers. The program's agency in Norway is administered as a foundation, while the Swedish, Finnish, and Danish agencies are incorporated into their national standardization organizations. The program in Iceland is housed in the Ministry of Environment. The five programs are very similar to ensure smooth operation and mutual recognition of activities among participating countries. Fees, structures, and processes are quite similar among the programs.

The national Nordic ecolabeling organizations propose product groups, and, according to the General Agreement for Nordic Eco-labelling, a pilot study is conducted to assess "the 1) qualitative and quantitative environmental problems associated with the product, 2) scope available for environmental improvements, 3) information needed by consumers, 4) requirements of commerce and industry for ecolabelling in the field, 5) expected costs of the development of criteria, and 6) product and market analyses for the Nordic market." The Nordic Ecolabelling Board makes the final decision on the selection of product groups, and determines which country will take the lead in developing the criteria.

The Ecolabelling Board usually appoints an expert group to work in an advisory capacity with the national organizations to develop the product criteria. The expert group is made up of representatives from the particular industry and consumer and environmental organizations and includes representatives from each of the Nordic countries. Once developed into a draft, the criteria are sent out for review in the Nordic countries. According to "Guidelines for Nordic Ecolabelling," "Information concerning criteria established, ... the composition of expert groups, and the state of progress of current work shall be open to the public.... The widest possible circle of interested parties should be heard in connection with all draft criteria." The criteria are to take into account environmental factors throughout the product's life, although the program considers it impossible to evaluate the <u>total</u> influence of a product on the environment. In addition to environmental criteria, the Swan also has a general regulation stating that manufacturers must

comply with domestic labor regulations, as well as quality and performance requirements.

The environmental protection requirements are set such that the market share of products that meet the criteria should not exceed one third of the total Nordic market. In the past, however, there have been situations that made this goal difficult to reach. At one point, the trade association of tissue paper manufacturers boycotted the Swan, and none of their members companies applied for it, even though they marketed their products' environmental qualities. Little was done on the part of the Swan program to negotiate, although the story of the boycott was in the press, and after about a year, the boycott was broken by one of the member companies.

The final set of criteria is either accepted or rejected by the Ecolabelling Board, and all decisions must be unanimous. Approved criteria are widely available in English, and are available electronically on the countries' Web sites. Once approved by the Board, a product category and its criteria are valid in all of the Nordic Council countries. Product criteria are usually valid for three years, at which point they are reviewed, taking into consideration changes in production technology and new knowledge about material inputs. The Board has the ability to cancel or modify the criteria during this period if new information is discovered.

To receive the Nordic Swan, manufacturers from within a Nordic Council country send an application to the program agency in his/her own country. Foreign manufacturers seeking an award apply to the country that developed the product category. Claims made by manufacturers are tested in independent laboratories, and manufacturers are required to perform and report the results of tests to ensure that all other requirements in the criteria are met for all labeled products. It is uncommon for products to fail because manufacturers have access to the criteria before they submit their application. Once an award has been made to a product by one country, the license to use the label is valid in any of the other participating countries, although manufacturers must pay an additional fee in each country to register their product. Follow-up inspections of products and processes are conducted to verify compliance with the award criteria. All documents submitted by the manufacturer are confidential.

Applicants for the Nordic Swan are required to pay a one-time application fee, between approximately US$375-1,500, depending on the country. If the application is granted, licensees also must pay an annual fee in each country where the label is used. The annual fee is .04 percent of the applicant's annual sales in each country where the product is registered, with a minimum of approximately US$750-1,400, and a maximum of approximately US$5,500-45,000. The Nordic Swan's sliding fee scale is designed to be accessible to small and medium-sized businesses; several companies participating have five or fewer employees. Approximately half of the program's funding comes from these fees, and approximately half comes from the participants' federal governments.

Products bearing the Swan logo are also purchased at both the corporate and government level. Many companies and national and local governments have a purchasing policy requiring that products they purchase are labeled with the Swan or its equivalent.

Program Methodology

For each set of labeling criteria, a report is produced that contains a discussion of the significant environmental impacts throughout the product life cycle and a discussion of the criteria themselves. The lead country for the labeling criteria may contract the evaluation of the environmental impacts to a consultant or academic expert. As a result of the evaluation of the Nordic program and the recommendations by the Nordic Council of Ministers, there is now more effort to include each of the participating countries in the development of criteria. There is also more effort, such as through the use of written product category environmental evaluations and draft criteria, to increase transparency and participation by other stakeholders in the process.

For example, for the criteria for furniture, the report discussed each of the major components of furniture (wood, fiberboard, metal, plastic, glazing), the manufacturing of furniture, including the use of adhesives and coatings, and the associated environmental impacts of each life cycle stage.

Following are the types of criteria for labeling of furniture products that were developed to address the significant environmental impacts:

Wood: The criteria require the applicant to state the type of wood used and its place of origin. This requirement will lead to criteria for sustainable forestry, which will be developed in the future.

Fiberboard: Wood-based board must satisfy the Nordic criteria for environmental labeling of fiberboard panels, which primarily deal with formaldehyde emissions.

Plastic: Additives to plastic materials shall not be based on cadmium, lead, mercury or other materials on a restricted list.

Metals: Halogenated organic solvents shall not be used in the processing or surface treatment of metals. Metals, with the exception of smaller parts as screws, hinges and mountings, shall not be plated with cadmium, nickel, chrome, and their compounds. Metal paint shall not contain pigments and additives based on certain heavy metals or contain high solvent content.

Glass: Lead glazing is not permitted.

Adhesives/coatings: The criteria prohibit adhesives or coatings that require health warnings in any Nordic country because they are classified as allergenic, toxic, carcinogenic, mutagenic or damaging to reproduction. There are also restrictions on free formaldehyde content and on other listed hazardous substances.

Other Information

The Nordic Ecolabelling Board is a member of GEN and most of the Nordic countries are participating with the development of ISO draft standards. Through its work with GEN and ISO, the Board hopes to increase the coordination with other ecolabeling programs.

The Board is also working with the EU to further develop the EU ecolabel scheme. According to Norway's information officer, it is Norway's official policy that they will "give up the Swan label if and when the EU ecolabel is able to replace it." The EU ecolabel will be considered a success when 80 percent of the public prefer EU labeled products over Swan labeled products; products in "central" categories like paper and detergents carry the EU ecolabel; and manufacturers apply for the EU ecolabel more than for the Swan. Norway's information officer does not foresee a difficult transition from the Swan to the EU if it is based on the aforementioned market pressures. The information officer also reports that the EU also believes that national and regional labels should be phased out over the next five years. This non-market based transition could be more problematic, especially depending on the relative strength of the EU ecolabel program at that time.

References

About the Swan label (Norway). [Online: Web]. Cited 8 September 1997. URL: http://www.interface.no/ecolabel/english/index.htm

Backman, Mikael. Lund University, International Institute for Industrial Environmental Economics. Personal communication with Gary Davis. November 1997.

Danish Environmental Protection Agency (Denmark). [Online: Web]. Updated 1996, cited 5 September 1997. URL: http://www.mst.dk/depa/index.htm

Finnish Standards Association (Finland). [Online: Web]. Updated 4 September 1997, cited 8 September 1997. URL: http://www.sfs.fi/summary.htm

Global Ecolabel Network. *GENews*. March 1997.

Konsument verket - KO. *The Consumer and the Environment; Results of a survey into awareness of the environment amongst Swedish consumers*. Konsumentverket & Eurika Research AB. Sweden. 1996.

Kankaanpää, Anne. SFS-ECOLABELLING, Finland. Personal communication with Abt Associates. Summer 1997.

Nordic Council of Ministers. *The Nordic Swan; Your environmental choice*.

Nordic Council of Ministers. *General Agreement for Nordic Eco-labelling.* 5 October 1994.

Nordic Council of Ministers. *Guidelines for Nordic Eco-labelling.* 24 January 1996.

Nordic Council of Ministers. *Nordic Eco-labelling; Scheme and Evaluation.* 1996.

Nordic Ecolabelling Board. *Environmental strategy.* 2 February 1997.

Nordic Ecolabelling Program. *Nordic Ecolabelling of Wooden Furniture. 31/1.2* 19 September, 1996.

Nordic Ecolabelling; The Swan (Sweden). [Online: Web]. Updated 7 April 1997, cited 8 September 1997. URL: http://www.sis.se/Miljo/ecolabel.htm

Nordic Environmental Label (Norway, Sweden, Finland & Iceland). [Online: Web]. Updated 26 March 1997, cited 8 September 1997. URL: http://www.interchg.ubc.ca/ecolabel/nordic.html

Organization for Economic Co-operation and Development, *Case Study on Eco-Labelling Schemes*. Paris. 30 December 1997.

SFS-ECOLABELLING. *The Environment Deserves an Award; Nordic Environmental Label.* 1997.

SFS-ECOLABELLING. *Nordic Environmental Labelling; Status of Licenses and Criteria Development*. June 1997.

Stokke, Jan Erik. Information Officer, Ecolabeling Norway. Personal communication with Abt Associates. Summer 1997.

Product Categories (number of awarded products in parentheses)

Final Categories

Adhesives (3)
All purpose cleaners (24)
Automatic dishwashing detergents (10)
Building materials: chipboard fibre board and gypsum board (8)
Batteries, Primary (5)
Batteries, Rechargeable (6)
Car care products (57)
Chain lubricants (1)
Chemical deicers
Closed toilet systems (1)
Coffee filters

Composters (12)
Copying machines (3)
Correction fluids
Detergents for sanitary facilities (12)
Diapers/nappies (6)
Diapers Textile
Dishwashing machines
Dust binding agents
Female sanitary products
Flooring materials (7)
Floor care products
Graphic products
Grease proof paper
Hand dishwashing detergents (4)
Tissue paper (2)
Lawnmowers (9)
Light sources
Marine engines
Newsprint paper
Oil burners & oilburner/boiler combinations (5)
Paper envelopes (12)
Personal computers (2)
Printed papers (50)
Printing papers (46)
Printers & Telefaxes
Refrigerators, freezers
Shampoo & Soap (2)
System for towels in dispensers (1)
Textile detergents (33)
Textiles (4)
Tissue paper (2)
Toner cartridges (14)
Wallcoverings
Washing machines (1)
Wooden furniture and fitments (6)
Writing instruments (1)

Criteria Under Review

Dustbining agents for roads
Folders and ring binders (Fin)
Packaging paper (Sw)
Windows (Fin)
Forestry, sawmill products (Sw)

Criteria Under Development

Audiovisual equipment
Boats (Fin)
Boat care products
Concrete (Sw)
Industrial degreasing (Sw)
Heating systems for solid fuels (Sw)
Refrigerating and heat pump plants (Sw)
Tires (Fin)
Water and sewage pipes (Sw)
Water taps with fittings
Wood fired furnaces (Sw)

Preliminary Studies

Sealing agents
Services (Sw)
Telephones (Fin)

EUROPEAN UNION ECO-LABEL PROGRAMME

Introduction

On March 23, 1992, the Council of Ministers of the European Community (EC) adopted a regulation that created a European Union (EU) "eco-label award scheme." The EU Eco-label program is intended to "promote the design, production, marketing and use of products which have a reduced environmental impact during their entire life cycle, and to provide consumers with better information on the environmental impact of products." (Commission of the European Communities, 1996.) The program is an element of a broader EU strategy to "promote sustainable production and consumption."

The EU Eco-label is run by the European Commission and administered at the national level by Competent Bodies, which are representative organizations chosen within EU member states. Currently there are Competent Bodies in 17 countries.[3] Eight of the member states participate in their own environmental labeling program, while other national programs rely strictly on the EU Eco-label. [4] Currently, the EU program is being revised (the revision process is explained below). The proposal for the revision envisions full complementarity between the EU Eco-label and the national labels with regard to those products for which there are EU criteria.

To date, criteria have been published for 11 product groups and 12 others are in the development process. The Eco-label has been awarded to 182 products, which corresponds to 40 licences awarded to 22 manufacturers and one importer. The EU Eco-label program considers it too early to assess the market effects of the Eco-label, given that it is still developing and has yet to gain visibility.

Recent Developments

The EU Eco-label program is currently undergoing a major revision of Regulation 880/92. While the program has evolved considerably since it was created in 1992, it is apparent to the European Commission that there is a need to "streamline and improve the approach, methodologies, and working procedures in order to increase its effectiveness, efficiency and transparency." (EC Newsletter on the EU Eco-label, 1/97) According to the *Eco-label Revision, COM (96) 603 final, SUMMARY*, the current program needs to be revised because:

[3] Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom, and Norway. Norway and Iceland have Competent Bodies but cannot vote because they are not EU members, but members of European Economic Area (EEA).

[4] Austria, France, Germany, Netherlands, and Spain have their own ecolabeling programs. Denmark, Finland, and Sweden participate in the Nordic Swan. Iceland and Norway participate in the Swan as well, but are not member states.

1. the present Eco-label program is considered to be too bureaucratic;
2. the program needs to be clarified, streamlined, and simplified in order to achieve greater market penetration;
3. there is international pressure to better incorporate trade principals such as transparency, non-discrimination, and use of internationally recognized standards; and
4. the proliferation of national ecolabel programs needs to be to curbed, since it can lead to internal market distortions and consumer confusion.

The following are among some of the changes that the Commission proposed in the revision:

1. establishment of an independent European Eco-label Organization to develop criteria, thus taking the political process out of the eco-label scheme;
2. introduction of a graduated label with one "flower" representing the achievement of a baseline standard, and two or three representing an improvement;
3. introduction of substantive provisions for ensuring compatibility with international trade principals;
4. increased "complementarity" between the EU and the national programs in the EU, and introduction of a ceiling for the annual fee and a reduced fee for small and medium-sized businesses;
5. ability of non-European producers to apply directly to the scheme; and
6. ability of retailers to apply for products under their own brand name.

Before being adopted, the proposal must be approved by both Parliament and the Council of Ministers. The approval process is iterative, and will require compromises and negotiations. The European Parliament is currently preparing comments on the proposal, at which point the proposal and comments will be sent to the Council of Ministers for comments. A representative from the EU Eco-label program reported that the proposed changes could be adopted by the end of 1998; however, there is no schedule. The representative pointed out that the revision process is quite slow, due to the numerous institutions, industry representatives, and government bodies that are involved, as well as to the wide range of views about the EU Eco-label that must be considered.

One of the aims of the EU revisions is to create conditions favorable to ultimately establishing a single ecolabel in the European Community. According to the EU Eco-label program, it is not likely that the EU Eco-label without programmatic revisions will "supersede national schemes in the long run," unless "positive action" is taken to stop the proliferation of national programs. Even though national programs have contributed to environmental improvements, they limit the market value of the EU Eco-label; the co-existence of national ecolabels, private ecolabels, and the EU Eco-label is causing confusion in the marketplace. The EU Eco-label program is proposing that over the next five years, national programs phase out the separate labeling of product categories that are covered by the EU Eco-label program. The EU representative noted that the full transition to a single European ecolabel would take much more time.

Program Summary

Several bodies are currently involved in the development to the EU Eco-label program. The proposed changes would greatly simplify this process. Under a revised Regulation, the European Commission will be responsible for the adoption of the Eco-label product groups through Commission's Decisions published in the *EC Official Journal*. The Commission facilitates the program operations and seeks guidance from and consensus among all the other parties. Competent Bodies (representative organizations within each EU member state) are designated in Member States to administer the program at the national level. The Committee of Competent Bodies meets every two to three months and before decisions are made. Interest groups participate in these meetings. The Consultation Forum provides stakeholder input, and is composed of Community-level representatives of five interest groups: industry, commerce, consumer organizations, environmental organizations, and trade unions. There are 14 members in the Forum. The Regulatory Committee, chaired by a non-voting representative of the Commission, has final approval of criteria for product categories and settles any objections made during the award process.

Proposals for new product categories are accepted from any interested party. The selection of product categories is usually initiated by the Commission. The Commission conducts a feasibility study to assess the suitability of the proposed product group, which is evaluated by the ad hoc working group. The ad hoc working group meets at key stages of the process, and is composed of representatives from Competent Bodies, interest groups, and the Consultation Forum.

To develop product criteria, the Commission conducts a market survey to understand the market, and takes an inventory of the impacts of the product on the environment. The impacts are quantified objectively on a "cradle-to-grave" or life-cycle basis using the indicative assessment matrix shown below. These impacts are then evaluated in an environmental impact assessment, which involves a life-cycle assessment (LCA). (The European Commission has issued guidelines for applying LCA.) Based on this analysis, product criteria are proposed. EU's goal is that the product criteria are strict enough so that ecolabeled products represent only 5 to 30 percent market share. The proposed criteria are presented to the Consultation Forum and voted upon by the Regulatory Committee, although the Commission makes the final decision on adopting the criteria. Criteria are valid for three years, at which point they are re-evaluated.

Competent Bodies accept applications from manufacturers of products that are produced or first marketed in their country, and from foreign manufacturers who first import into the EU through their country. Results of independent testing must be submitted with the application, and testing fees are to be paid by the applicant. Awards given to products must be approved by all Competent Bodies, via the Commission. Competent Bodies award the ecolabels within their country, and they must monitor that the ecolabels are properly used.

An application fee of 500 ECUs (~US$550) is required to cover administration costs, and, if the product receives the award, an annual licensing fee is calculated as 0.15 percent of the annual volume of sales within the EC. These are guideline figures; Competent Bodies have the discretion to set actual fees at levels 20 percent greater or smaller than the guideline figures.

Program Methodology

To promote consistency in the use of LCA in the Eco-label scheme, the European Commission has issued Guidelines for the Application of Life Cycle Assessment in the EU Eco-Label Award Scheme, prepared by the so-called "Groupe des Sages," a group of European LCA experts. First, the guidelines make it clear that "LCA does not replace, or eliminate the need for other considerations and processes within the decision-making procedure aimed at setting eco-label criteria." LCA, according to the guidelines, is "used to identify key environmental aspects for the product group considered and provide quantified data on the range of such impacts." Other assessments are also necessary to determine the criteria, including the market share of the product, the technical and economic feasibility of meeting the criteria, and the ability of the criteria to achieve maximum overall environmental improvement.

The proposed approach for criteria development has not yet resulted in any product criteria, but the following examples illustrate the manner in which the studies and criteria development are proceeding under the new guidelines.

Example: Converted Paper Products

The contract to develop the draft criteria for labeling converted paper products was awarded in late 1995 to a Danish consulting firm. Converted paper products include envelopes, stationary, notebooks, and account registers as the principal product categories. The consultants prepared a market and feasibility survey in early 1996, which was reviewed in April 1996 by the ad hoc working group of experts that had been assembled by the EC. The ad hoc working group decided that an extended market survey should be prepared in order to define as many product subcategories for the labeling criteria as possible in order to widen the environmental benefits of the label. This extended market survey was completed in October 1996 and identified ten product subcategories within the overall category of converted paper products.

From this market study a goal and scope were defined for a life-cycle inventory that was completed in October 1996. It was difficult defining a functional unit that would serve as the basis for LCA of several diverse subcategories of products. The functional unit recommended was 1 kg of paper used for the further manufacturing of the products. The LCA performed stopped at this boundary and did not develop quantitative data on production processes beyond the production of paper.

The EC and the consultants originally intended to gather primary data from the product

manufacturers, but these manufacturers and their trade associations were unable or unwilling to provide the data for such a diverse range of product subcategories. Instead, the consultants relied upon publicly available databases for data on the significant manufacturing processes involved in the life-cycle of paper. The LCA report issued in October 1996 was more of a compilation of these process data than an actual LCA, because it did not combine the processes and process data into the production of a functional unit of 1 kg of paper.

The ad hoc working group met again in the fall of 1996 and could not come to consensus on the functional unit that would apply to all of the product subcategories. There was a concern that the proposed functional unit would focus more on the process of paper making than on the finished products. As a result of the lack of consensus, one product subcategory was chosen, envelopes, for further study and development of labeling criteria. Envelopes were chosen because they are a well-defined product subcategory and are produced and consumed in greater quantities than any of the other subcategories. While it was suggested by the ad hoc working group that plastic envelopes should be considered in the product category, it was not feasible to develop a market study and it was not feasible to develop a functional unit for evaluation. The LCA study did include some data concerning plastic envelopes to allow for comparison to paper envelopes.

Once the product category was narrowed to paper envelopes, the functional unit was defined as standard-sized envelopes with a clear plastic window. The consultants defined the goal of the LCA as "semi-quantitative," because it was not possible within the time and resources available to compile data for all the products and substances involved in the production of envelopes and it was impossible to define certain inputs during the manufacturing stage (e.g., the amount of ink used to print on the envelope) in terms of the functional unit of the envelope. The quantitative data were mostly related to the pulp and paper process, whereas the qualitative information was mostly related to the chemicals used when converting paper to envelopes and to the specific properties of substances that can affect the recycling of paper envelopes. Recycled paper as an input and recycling as an end-of-life management method were included in the LCA study.

Meetings were held with five envelope producers during the LCA phase to gain a clear understanding of the process of manufacturing and to collect some specific data. A meeting was also held with Greenpeace International, and written comments from the American Forest and Paper Association were also taken into account.

Although life-cycle data on some of the materials used in envelopes, such as glues, were not gathered, it was still necessary and possible to address these materials in the development of criteria. Glues, for instance, can contain toxic substances and can also significantly affect recyclability of envelopes. Lists of substances contained in these glues were made as part of the study.

The LCA report discussed in detail each stage of the life cycle of envelopes and identified the key environmental features for each. Then an impact assessment was performed by categorizing key inputs and outputs into impact categories and identifying impacts as local, regional or global. The

impact categories addressed were: energy consumption (e.g., purchased electricity, feedstock energy in raw material); consumption of raw materials (e.g.,water, wood, recycled paper, fossil fuels); eutrophication and pollution of streams and lakes with organic matter (e.g., Chemical Oxygen Demand - COD); toxicity of halogenated organic discharges to water (e.g., Adsorbable Organically bound Halogens - AOX); global warming--emissions of CO2, etc.; acid rain--emissions of SO2, Nox; and substances affecting recycling of paper products.

Labeling criteria were proposed to address these life-cycle impacts, which included the following: requirement to use recycled paper or wood from sustainably managed forests as raw material; substances used for surface coatings, sizing, and glueing should be re-pulpable when the paper is recycled; restrictions on substances used for glues, coatings and inks due to toxicity; the envelope should be de-inkable; plastic films should not be used as coatings; plastic windows should be either re-pulpable or filterable when the paper is recycled; limits on releases of COD and AOX to water from the pulp and paper production; limits on emissions of CO2, SO2, and NO2 to air for pulp and paper production; limit on percentage waste from cutting of envelopes; limit on energy consumption in pulp and paper production.

Example: Shampoos

The EC contracted with the consulting firm to perform the feasibility and market study and LCA for shampoos in late 1995. The feasibility report, delivered in April 1996, was based on a review of the industry and consumer literature, interviews with company representatives and trade association representatives, and a review of available life-cycle data for major ingredients of shampoos (surfactants). The report recommended proceeding with development of labeling criteria for liquid shampoos, excluding professional shampoos, dry or mousse shampoos, and shampoos sold only by prescription. Because the amount of shampoo per use varies so much with the user, the consulting firm recommended that the functional unit be based upon the main characteristic of shampoos, their detergent power.

The feasibility study and recommendations were discussed in the ad hoc working group in the spring of 1996. Because there was no reliable test available to develop a functional unit based upon the detergent power of shampoos, the ad hoc working group decided to base the functional unit on the dry organic content of shampoos per average dose, which was defined as 3 grams of dry organic matter. The consultants then prepared an LCA study based on this functional unit to be used to develop the labeling criteria.

The data collection for the LCA study was made difficult by lack of industry participation. The industry's lack of participation stemmed, at least in part, from a disagreement with the EC over whether a practical functional unit could be established for the development of criteria for labeling. As a result, the consultants focused the life-cycle inventory on the major ingredients of shampoos, surfactants, and on the packaging, and relied upon existing LCA data for the study. Not surprisingly, the use stage predominated for energy consumption and air emissions, especially when the consultants took into account the use of hot water for washing and rinsing and the use of

a hair dryer for drying the hair. Based upon the available surfactant life-cycle inventory data, the consultants concluded that differences in surfactant production impacts were dwarfed by the use stage impacts. The firm also concluded that packaging type was significant principally in the end-of-life stage when incineration was included as a waste management method for certain plastics.

Applying life-cycle impact assessment to the inventory results, the consultants recommended that criteria for labeling be set to address the following impacts: energy and water consumed during use--consumer guidance on the bottle could recommend lowering water temperature, for example, or the use of water conserving devices; packaging waste generation--decrease primary packaging through refills or by increasing recycled content of bottle; water pollution during use--criteria to address biodegradability, bioaccumulation, and nitrogen content; and dangerous ingredients--criteria to restrict certain toxic substances.

Other Information

The EU Eco-labeling program is actively participating in ISO draft standards negotiations. The proposed changes to the EU program are designed in part to ensure compatibility with the ISO standards for environmental labeling. When ISO standards are finalized, the EU program will incorporate them into their standards. In addition, steps have been taken to ensure full access, non discrimination (EU and non-EU parties will be "treated on an equal footing"), and transparency for foreign interests (largely late in the process). No mention is made of possible conflicts between a life-cycle-based product evaluation and GATT's prohibition of trade restrictions based on processing and production methods (PPMs). The EU is not a member of GEN, but may request to become a member shortly. Several of the member countries are members of GEN.

In an effort to make the EU Eco-label program transparent and to increase its visibility, the following information is published in the *Official Journal of the European Communities*: Commission decisions on product groups, product criteria, a list of products for which the Eco-label has been awarded, the names of the licensees, and the names and addresses of the Competent Bodies. It addition, a quarterly newspaper is published by the Commission that provides "an update of the work in progress for each product group," as well as the names of the Competent Bodies and the members of the Consultation Forum (OECD, 14).

The EU Eco-label program does not currently have a program for small and medium-sized businesses; however, it is accessible to them via a sliding fee scale. As mentioned above, the proposed revision would include provisions to reduce the annual fee for small and medium-sized businesses.

In addition to the Eco-label program, the EU is going to introduce a directive for end-of-life electronic equipment. Initially it will address the electronics industry. It has not been decided, however, if the directive will follow the published draft directive for end-of-life vehicles. The planning group will begin working on the draft in fall of 1997 and hopes to present the draft to the

Member States and industry later in the fall.

References

Aksel Bagh, John, dk-Teknik. Personal communication with Gary Davis. 23 April 1997.

Butzkamm, Rainer. European Commission, Brussels. Personal communication with Abt Associates. Summer 1997.

Butzkamm, Ranier, and Olivier Luansi. European Commission, DGXI. Personal communication with Gary Davis. April 24, 1997.

Ecobilan. *European Ecolabelling for Shampoos: Feasibility Study*. April 1996.

Ecobilan. *European Ecolabelling for Shampoos: Inventory, Environmental Impact Assessment*. Feb. 1997.

Etienne, Roger. Ecobilan. Personal communication with Gary Davis. 25 April 1997.

Eco-label (EU). [Online: Web]. Cited 16 January 1997. URL: http://www.ns.ec.gc.ca/g7/eco-eur.html

European Commission. *Commission Information on Eco-Labelling: Procedural Guidelines for the establishment of product groups and ecological criteria*, Issue No. 6. June 1994.

European Communities, Commission of the, *Eco-label Revision; COM (96) 603 final; SUMMARY*.

European Communities, Commission of the, *EU Eco-label Awards*. 14 May 1997.

European Communities, Commission of the, *Proposal for a COUNCIL REGULATION (EC) on a revised Community eco-label award scheme; COM (96) 603 final*. Brussels: 11 December 1996.

European Commission, prepared by the Groupe des Sages. *Guidelines for the Application of Life Cycle Assessment in the EU Eco-label Award Scheme*. 1997.

European Commission, Environment, Nuclear Safety & Civil Protection. Several pages on eco-label.[Online: Web]. Cited 2 July 1997. URL: http://europa.eu.int/en/comm/dg11/dg11home.html

Global Ecolabel Network. *GENews*. March 1997.

H.A. Udo de Haes, et al. *Guidelines for the Application of Life-Cycle Assessment in the EU Ecolabelling Programme*, Leiden, The Netherlands. May 1994.

Heinke, Gary W. et al., *Final Report: Development of an Eco-label Certification Programme for Hong Kong/ RC96-19.* Hong Kong: Research Centre of the Hong Kong University of Science and Technology, June 1996.

Jones, Michael R. UK Ecolabelling Board. Personal communication with Abt Associates. January 1997.

Organization for Economic Co-operation and Development, *Case Study on Eco-Labelling Schemes.* Paris. 30 December 1997.

Pulp & Paper. "EU's new 'eco-label' called trade barrier." October 1996: 19-20.

UK Ecolabelling Board. *UK Ecolabelling Board Newsletter: Ecolabel Criteria*. No. 10. August 1996.

UK Ecolabelling Board. *UK Ecolabelling Board Newsletter*. No. 11. April 1997.

Wheeler, David. "EC Ecolabelling myths." *Chemistry and Industry*. 5 April 1993.

Product Categories

Final Categories

Washing machines
Soil improvers
Toilet paper
Paper kitchen rolls
Laundry detergents
Single-ended light bulbs
Indoor paints and varnishes
Bed-linen and T-shirts
Double-ended light bulbs
Copying paper
Refrigerators

Criteria Under Review

Dishwashers (being revised)
Footwear
Cat-litter

Study Underway

Bed mattresses
Batteries for consumer goods
Floor-cleaning products
Detergents for dishwashers
Shampoos
Rubbish bags
Converted paper products

Study Temporarily Suspended

Growing media
Insulation materials
Hair sprays

Preliminary Phase of Study

Personal computers
Textile products

FRANCE'S NF-ENVIRONNEMENT MARK

Introduction

France's national, voluntary ecolabeling program, the NF-Environnement Mark (Norme Française Environnement), has two functions: first, to fulfill the need for reliable information on the environmental attributes of a product, and second, to recognize and reward companies that take environmental attributes into consideration when making a product. The NF-Environnement Mark is a seal-of-approval program aimed at certifying products that have a reduced negative impact on the environment. Development of the label began in 1989. However, because of initial opposition from industry, the program was not fully operational until 1992. The main administrative body for the NF-Environnement Mark is the AFNOR (Association Française de Normalisation,) the standards institute of France.

As a relatively new program, there have been only a few product categories for which product criteria have been established. Currently, the NF-Environnement Mark can be awarded to products in six product categories. There are over 300 products that carry the NF-Environnement Mark with the majority of these in the paints and varnishes (160) and garbage bag categories (100), because these were two of the first categories established. The number of eco-certified products in the paints and varnishes category is expected to drop once criteria for this category are revised.

Despite being a relatively new program, the awareness of ecolabeling in France is growing. In 1996, AFNOR asked CREDOC, one of France's largest national polling agencies, to survey 2,000 French households (representative of the population in France). The purpose of the survey was to characterize consumers' opinions on ecolabeling and environmental products. According to the survey, 63 percent of the respondents said that there is a lack of quantitative and qualitative information about "green" products and 92 percent of those surveyed said that they preferred products with less packaging. Of those surveyed, 54 percent said that they would be willing to pay up to 10 percent more for ecological products. The program hopes that "consumer leaders," those who are aware of the NF-Environnement Mark and ecolabeling in general, will spread the word to others about ecolabeled products (Bœglin, 1997).

Recent Developments

On June 24, 1992, work on NF-Environnement Mark was suspended by the AFNOR pending a re-evaluation of its methodology. Originally, the NF-Environnement Mark planned to use a multi-criteria matrix similar to Blue Angel and the EU Eco-label. Products were assessed using a systematic life-cycle assessment (LCA), which looked at products from "cradle-to-grave" (i.e., amount and types of raw materials used, production, transportation, effects of consumption, and disposal), to evaluate their overall environmental impacts at each of these stages. However, because of the time-consuming nature and costs associated with LCA, AFNOR decided upon a modified life-cycle analysis approach, called the "New Simplified Procedure," to develop criteria and to evaluate products to receive the label (Bœglin, 1997). This new procedure uses a semi-

qualitative life-cycle assessment for the product, and identifies the "key stages" in the product's life cycle that have the most significant environmental impacts. This new process is iterative based on both qualitative and quantitative data. The "New Simplified Procedure" was adopted to make the NF-Environnement Mark less expensive and more available to small and medium-sized businesses and industries.

NF-Environnement Mark plans to coordinate its efforts with other European programs, "both through the process of harmonization of standards and through its participation in European reciprocal recognition agreements" (General Rules, 1992). As a result of this coordination of efforts, the product criteria for paints and varnishes were approved on June 3, 1992, based on a study originally conducted for the EU Eco-label. NF-Environnement Mark is currently not a member of the Global Ecolabelling Network (GEN) for financial and logistical reasons. However, AFNOR is considering becoming a member soon to take advantage of the information exchanged through GEN membership. AFNOR participates regularly in meetings and exchanges with other ecolabeling programs on trade issues, standards development, and program implementation.

Program Summary

Four groups are involved in the NF-Environnement Mark program: the NF Environmental Label Committee (Comité de la Marque), composed of 18 representatives from various stakeholders, including industry, manufacturers, wholesalers, consumer and environmental protection associations, and the French Ministry for the Environment; the ADEME (French Energy Management and Environment Agency); the AFNOR (the French Institute for Standards); and other stakeholders particularly interested in the product category.

The NF-Environnement Mark can be awarded to consumer goods and intermediate products. Theoretically, anyone can propose new product categories. In practice, however, industry representatives or environmental authorities such as ADEME, typically propose products that they feel may be suitable for the ecolabel. These proposals are collected by AFNOR and submitted to the Label Committee, who then chooses the product categories for the ecolabel. Based on environmental evaluations using the "New Simplified Approach," the Label Committee, decides if the overall product group(s) in which the proposed product(s) belong, would be good candidates for the NF-Environnement Mark.

Draft product criteria, or as they are known, the "Réglement Technique" (Technical Rule), include all the specific guidelines (environmental, product performance, advertising, etc.) which manufacturers must meet to be awarded the NF-Environnement Mark. Once finalized by the Committee and approved by the General Director of AFNOR, the criteria are published in the *Journal Officiel* (France's equivalent of the United States Federal Register), and applications for the NF-Environnement Mark are accepted. Product criteria are usually re-evaluated every three

years, but may be evaluated sooner if there are new breakthroughs in technology relating to the product category. Only the garbage bag and paints and varnishes product categories have reached their three-year revision periods -- the other four product categories have been so recently established that they still have another one to two years before their product criteria are re-considered.

Applications for the NF-Environnement Mark are sent to the General Director of AFNOR. The manufacturer must pay a flat-rate registration fee of 420 Francs (approximately $2,500 US) to cover the costs of processing the application. In addition, the manufacturer must repay the costs of verifying that the product conforms to the Technical Rules, as well as pay a site visit fee, an administration fee, and compliance test fees. In addition, an annual royalty payment (0.1 percent of the product sales) is payable for the right to use the NF-Environnement logo. If a manufacturer is found to be mis-using the NF-Environnement Mark, AFNOR may apply sanctions on the product and/or may withdraw the manufacturer's right to use the ecolabel.

Program Methodology

Once proposals for products categories are made and collected by AFNOR, environmental evaluations based on the "New Simplified Approach" are made by the Label Committee, who decides if the overall product group(s) in which the proposed product(s) belong, would be good candidates for the NF-Environnement Mark. Though a full LCA is not conducted, information from other programs' LCAs, where available, and information from producers are used in evaluating a product's suitability for the label. In addition, the program follows SETAC guidelines in its evaluations.

When developing product-specific criteria, products are assessed to determine their environmental impacts, based on multiple ecological factors, (e.g., the impact of the products' wastes on the environment -- to air, water, and soil). Once identified, these impacts are quantified for setting threshold levels (e.g.,, limits on toxicity of chemicals, VOC content, hazardous materials content, etc.). Products are also assessed on the following: energy use, raw material extraction and use, emissions during production, product uses, potential for recycling, disposal, product ingredients, type of wastes generated, environmental and health and safety hazards, and durability as well as real duration of use. Additionally, the NF-Environnement Mark conducts a generic environmental impact analysis when developing product criteria.

The NF-Environnement scheme invites stakeholders from various organizations to participate in all stages of criteria development. For example, a working group composed of representatives from industry, retailers, environment, and consumer NGOs, AFNOR, and if needed, experts from the concerned product sector, are involved in drafting the Technical Rule. Foreign companies are also invited to participate in the draft criteria development but must first express their interest in participating in the process. They may then be given the option of participating in the criteria development process and will at least be told what the draft criteria are and be invited to provided their comments. For example, several foreign garbage bag and vacuum cleaner manufacturers

were involved in the criteria development for these categories.

Other information

Although possession of the NF-Environnement Mark is not an official requirement for procurement, some distributors of paints and varnishes, and/or retail stores, require that their suppliers provide at least one line of product that carries the NF-Environnement Mark. Additionally, certain municipalities and local authorities have specified that the garbage bags they purchase must bear the NF-Environnement Mark.

Because the NF-Environnement Mark is a relatively new program, there have been no studies to determine overall trade and market effects. The NF-Environnement Mark has not yet developed product criteria for products imported from developing countries. The only foreign products that have been awarded the French ecolabel have been products manufactured by European companies. Because the NF-Environnement Mark is a relatively new program, it has not yet gained international recognition, and information about the program has not been available internationally -- in fact it is still in the early stages of recognition domestically.

References

Bœglin, Nadia, AFNOR, personal communication with Abt Associates, May 1997.

Organization for Economic Co-operation and Development, *Case Study on Eco-Labelling Schemes*. Paris. 30 December 1997.

Association Française de Normalisation (AFNOR), 1997, *Fact sheet: La Preuve par NF-Environnement.*

Association Française de Normalisation (AFNOR), February, 1997, *Information File on the NF-Environnement Mark.*

Association Française de Normalisation (AFNOR), April, 1997, *La Marque NF-Environnement.*

ADEME (French Energy Management and Environment Agency), *Background information and statistics from the CREDOC survey (1996).*

Association Française de Normalisation (AFNOR), 1992, *General Rules Applicable to the NF-Environnement Label.*

Davis, G.A., *The Use of Life Cycle Analysis in Environmental Labeling*, US Environmental Protection Agency, Office of Pollution Prevention and Toxics, EPA/742-R-93-003, September,

1993.

Proia, Patricia, AFNOR. Personal Communication with Abt Associates (Gary Davis). April, 1997.

AFNOR. *Information File on: The NF-Environnement Mark,* February 1997.

Etienne, Roger, Ecobilan. Personal communication with Abt Associates (Gary Davis). April, 1997.

AFNOR. *Marque NF-Environnement "Aspirateures Traineaux" Reglement Technique.* AFNOR 207, March, 1996.

Product Categories (number of awarded products in parentheses)

Final Categories

Paints and varnishes (160)
Garbage bags (100)
Carpet glues
Vacuum cleaners
Soap-saving washing machine balls
Garbage compressors

Categories Under Review

Furniture
Scouring solvents/powders
Containers
Photography developing equipment

Categories Under Consideration

Pharmaceuticals
Agro-foods
Services
Automotive sectors

GERMANY'S BLUE ANGEL

Introduction

Germany introduced the Blue Angel program in 1977, making it the first country to implement a national ecolabeling program. The Blue Angel was launched by the Federal Minister of the Interior and the Ministers for Environmental Protection of the Federal States. The German government views its ecolabeling program as a "soft instrument" of environmental policy, since the program cannot establish binding requirements or bans, and because participation in the program is completely voluntary. The Blue Angel is a seal-of-approval program, and relies on information, motivation, and a commitment to the environment from both manufacturers and consumers.

The primary goals of the Blue Angel program are 1) guiding the consumer in purchasing quality products with fewer adverse environmental impacts, 2) encouraging manufacturers to "develop and supply environmentally sound products," and 3) using the ecolabel as a "market-oriented instrument of environmental policy" (Umweltbundesamt, 1990). As the oldest ecolabeling program, the Blue Angel program has served as a model for many other ecolabeling programs in existence around the world today.

The Federal Minister for the Environment attributes the success of the Blue Angel to "the growth of environmental awareness on the part of consumers and producers" (Umweltbundesamt, 1990). In a 1988 survey of 7,500 German households, 79 percent were at least familiar with the ecolabel, and 68 percent correctly linked the ecolabel with the concept of environmental protection. Similar opinion polls have been performed on a regular basis, showing that the Blue Angel is perceived as a reliable ecolabel.

The Blue Angel program has been and continues to be popular among manufacturers and consumers. Compared to current levels, the program grew slowly at first, issuing only 500 ecolabels in 33 product categories as of 1984. By mid-1993, however, the ecolabel appeared on 3,503 different products in 75 categories. As of April 1997, 921 manufacturers (or importers) have been awarded the Blue Angel for 4,135 products in 88 product categories. Approximately 17 percent of these awards were given to non-German companies.

Recent Developments

Since the program's inception, criteria development has become increasingly more complex. As technological innovations and ideas about environmental protection and pollution prevention have progressed, criteria have been modified in order to incorporate these changes. Whereas previously only one or two factors may have been considered when developing criteria, multiple environmental attributes (e.g., hazardous substances, emissions, pollution prevention and safety)

are now addressed. The overall process by which criteria are developed, however, has not

changed significantly since 1993 (Breier, 1997).

Pilot projects and preliminary research are currently underway to develop product criteria for numerous product groups (e.g., electrical appliances and products, products for do-it-yourself and handicrafts, household chemicals and alternatives, heating technology, consumer and industrial products). Interestingly, the pilot project for the furniture made from rattan and jute product category is being conducted in cooperation with developing countries like Bangladesh and India. Once developed, criteria for this product group will be unique in that they are for imported products.

Germany does not foresee making major revisions to the Blue Angel program to make it more innovative. Part of the success of the Blue Angel program is based on its history and tradition and manufacturers' familiarity with the program. For these reasons, major revisions to the program are not planned (Breier, 1997). Germany has recently joined the Global Ecolabelling Network (GEN), however, as a way to improve harmonization and to obtain and exchange information about other ecolabeling around the world.

Program Summary

The Blue Angel program is administered by three organizations: the Jury Umweltzeichen (Environmental Label Jury), the German Institute for Quality Assurance and Labeling (RAL), and the Federal Environmental Agency (Umweltbundesamt). The Environmental Label Jury is made up of representatives from industry, the scientific and business communities, environmental organizations, consumer organizations, trade unions, and churches. The RAL is a non-profit standards organization that acts as the administrative body for the Blue Angel program.

The process of developing and awarding the Blue Angel ecolabel has three steps. First, product categories are proposed (typically by manufacturers). From these proposals, the Federal Environmental Agency and the Jury choose suitable product categories for the Blue Angel. Each year an average of 150 product categories is proposed; typically, only six are selected as suitable product categories for the ecolabel.

Once product categories are selected, the Federal Environmental Agency drafts criteria for each product group. It takes between six months and one year to draft the basic product criteria. Criteria are typically revised every three years. If there are major technology or innovative breakthroughs in the product category, criteria may be re-assessed prior to the end of the three-year period.

Draft criteria are forwarded to RAL, which organizes "expert hearings" to address technical questions regarding the draft criteria. Representatives from industry, manufacturing, consumer and environmental organizations, and, occasionally, scientists and representatives from testing institutes, are invited to ask questions and make comments on the draft criteria. Representatives from foreign companies are also welcome to make suggestions and comments at the hearing.

Comments from the expert hearing are taken into consideration when the Federal Environmental Agency revises and the Label Jury finalizes the criteria. The results are published in press reports of the Federal Minister for the Environment, Nature Conservation, and Nuclear Safety. RAL published the final basic criteria.

In the last step, manufacturers submit applications to become certified to use the ecolabel on particular products. Compliance with criteria is verified by statements from the manufacturer, testing by independent facilities, and data and product information sheets. If everything is in compliance with the basic product criteria, RAL forwards the application to the Federal Environmental Agency and the federal state in which the manufacturer is located. A contract is signed for the use of the ecolabel, for a duration of four years. If during these four years, the Jury revises product criteria, then manufacturers must re-apply for the contract for those products. Applicants must pay an initial application fee of DM 300 ($170.00 US), and an annual fee based on estimated annual sales of the labeled product. In addition, users of Blue Angel must also contribute to an advertising fund for the program. All fees are paid to RAL.

Program Methodology

Producers come forward to the Blue Angel program and make product proposals. However, unlike many other ecolabeling programs, the Blue Angel does not conduct an impact analysis when choosing product categories. Characteristics of the manufacturing process used to produce the product are of less importance for Blue Angel certification. The program's reasoning for excluding earlier stages of the product life cycle is that Germany's environmental protection laws and regulations address the reduction and avoidance of environmental damage during the production stages. Instead, when choosing product categories, the Blue Angel considers the following: transportation and distribution costs, product uses, potential for the product to be reused, maintenance costs, recyclability, final disposal, and the product's ingredients and materials restrictions.

When developing draft award criteria, the Blue Angel considers previous literature and studies relating to the product category as well as other programs' life-cycle assessments of the category. Additionally, the program may also conduct its own independent tests and studies and often obtains information from participating producers themselves about the product category. Draft criteria are based on the potential environmental damage the products may have during usage and disposal. A series of environmental and other factors is assessed. This series includes: the amount of toxic and/or hazardous substance in the product; the emissions to air, water, and soil; noise pollution; waste prevention, waste reduction and/or recycling opportunities at each stage; amount of natural resources used; the safety of the product; and, finally, the minimum requirements for the product's performance. The Blue Angel follows SETAC guidelines when developing its award criteria.

Other Information

Recently, the Blue Angel has served as a way to identify environmentally preferable products in Germany. Many public procurement guidelines in local states and municipalities suggest buying Blue Angel-certified products, or at least to consider the criteria developed for product categories when making procurement decisions.

It has been suggested that ecolabeling programs can act as a barrier to trade for imported goods, when product criteria relate to production stages. Because Germany's Blue Angel program does not include production *process*-related criteria, but instead concentrates on the final environmental impact of the product, this aspect of the program is viewed as avoiding a potential trade barrier. Many of Germany's award criteria do have minimum recycled content requirements, however, which are difficult to meet for many exporters to Germany. In this respect, many foreign countries (e.g., Brazil, who is faced with these minimum requirements for their paper packaging) see these requirements as trade barriers. Any manufacturer, domestic or foreign, may apply for the Blue Angel ecolabel as long as they meet the specified product criteria.

References

Breier, Nicola, Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (Bundesministerium für Umwelt), personal communication with Abt Associates, 1997.

Federal Environment Agency (Umweltbundesamt), April 1997, *Information Sheet on the "Environmental Label": Current Facts and Figures.*

German Institute of Quality Assurance and Labeling (RAL), (Deutsches Institut für Gütesicherung), and the Federal Environment Agency (Umweltbundesamt), November 1996, *The Environmental Label Introduces Itself.*

German Institute of Quality Assurance and Labeling (RAL), (Deutsches Institut für Gütesicherung), and the Federal Environment Agency (Umweltbundesamt), June 1997, *Umweltzeichen, Environmental Label, German "Blue Angel": Product Requirements.*

Federal Environment Agency (Umweltbundesamt), 1994, *Das Stellt Umweltzeichen Sich Vor.*

Federal Environment Agency (Umweltbundesamt), 1990, *Twenty Arguments Against the Environment Label... [20 Argumente gegen das Umweltzeichen...und was man davon zu halten hat]*.

Organization for Economic Co-operation and Development, *Case Study on Eco-Labelling Schemes*. Paris. 30 December 1997.

Product Categories (number of awarded products in parentheses)

Final Categories

Retreaded tires (4)
Returnable bottles (90)
Low waste hair sprays, deodorants, and shaving foams
Sanitary paper made from recycled paper (182)
Low-emission oil burners (84)
Low-pollutant paints (1,345)
Powder paints
Salt-free blunting spreading material (46)
Recycled paper (315)
Zinc-air batteries (16)
Potting containers and similar mould parts made from recycled material (6)
Sound-proofed glass collection bins for noise-sensitive areas (16)
Waste water-poor car-washing plants (17)
Environmentally sound pipe cleaners (14)
Reusable packing for food production (1)
Reusable packing for transportation (19)
Products made from recycled plastics (68)
Products made from waste rubber (14)
Water-saving flushing cisterns (46)
Electronically operated shower facilities (7)
Products free from insecticides for indoor pest control and prevention (24)
Wall paper and ingrain wall covering made from recycled paper (109)
Wall paper covering paper and plastic materials
Building materials made from recycled paper (5)
Halogen-free cooling and insulating liquids for electrical equipment (4)
Low-formaldehyde products from wooden materials (for indoor use) (105)
Low-emission gas burners (86)
Combination boilers and circulating water boilers for gaseous fuels (34)
Combined burner/boiler units with gas blast burner (14)
Low-noise mopeds (2)
Water-saving flow restrictors (31)
Water-saving flushing valves (4)
Soil meliorators and soil adjuvants made from compost (43)
Combined oil burner/boiler units (62)
Solar-energy products and mechanical watches (34)
Rapidly biodegradable chain lubricants for power saws (94)
Building materials predominantly made of waste glass (3)
Lithium batteries free of mercury and cadmium
Environment ticket in public transport (17)
Highly heat-insulating multi-layer window glass (15)

Low-noise construction machines (191)
Low-noise compost choppers (32)
Reusable ribbon cassettes and refillable toner cartridges (38)
Photoconductor drums for laser printers (1)
Recycled cardboard (368)
Thermal techniques (hot air) for pest control of ligniperdous insects (7)
Low-noise and low-soot municipal vehicles with diesel drive (18)
Low-noise and low-soot municipal vehicles with gas drive (1)
Building materials and gypsum made from recycled materials
Low-emission and energy-saving gas fired condensing boilers (59)
Low-emission and waste reducing copiers (135)
Rapidly biodegradable lubricants and forming oils (45)
Unbleached hot-filter paper (18)
Low-pollutant fire extinguishers
Lead-free seals (2)
Cadmium-free hard-solder (7)
Low-waste, resource-saving text marker (5)
Component-system detergents (1)
Independent burning gas heaters and flued-bed built-in appliances with atmospheric burners (18)
Newspaper printing paper (consisting predominantly of recycled paper and bleached paper without chlorine (30)
Solar collectors (17)
Low-pollutant nail varnishes
CFC-free and energy saving refrigerators and freezers
Low-emission chipboard (3)
Low-waste and low-water pollutant towels in dispensers (21)
Computers (73)
Rapidly biodegradable hydraulic fluids (27)
Low-emission gas burners (14)
Electronic ballasts for fluorescent lamps (5)
Tooth brush with exchangeable heads (6)
Low-noise and low-emission chain saws (5)
Sewage plant-compatible sanitary additives (8)
Printers
Recyclable video and audio cassettes (1)
Electrical appliances for hand drying (3)
Mercury-free medical temperature sensors

Categories Under Consideration

Household appliances (including combi-appliances)
Rechargeable consumer batteries
Halogen-free electric cables and wires
Cadmium-free infrared lamps
Television sets
Coffee machines
Mobile sound-reproduction sets with headphones (walkmen)
Commercial refrigerators and freezers
Appliances of office communications
Gas stove and electric cookers
Low-noise and low-emission motor-lawnmower
Electric-equipment
Low-solvents special coatings
Dispersion paints in returnable containers
Graffiti cleaners
Construction materials made of recycled material for use in building construction
Low-emission paint-spraying guns
Heat-insulation materials made of renewable resources
Biological pest control agents
Disinfectants
Technical devices as an alternative to sanitary additives
Biodegradable motor oil for two stroke engines
Electronically controlled circulating pumps
Heat cost distributer/heat quantity meter
Products made from jute
Products made from rattan
Tabular Plastic containers for non-beverage uses
Satchels
Flame retardants
Easy de-inkable and dyes for printing containing less harmful substances
Retrofitable and low-waste mug oil filters for cars

GERMANY'S GREEN DOT PROGRAM

Introduction

In 1991, Germany established the Ordinance on the Avoidance of Packaging Waste (Packaging Ordinance). According to the Packaging Ordinance, domestic and foreign manufacturers and distributors are required to take back all transport packaging such as crates, drums, pallets, and styrofoam containers (i.e., primary packaging) and recycle or reuse these materials. In 1992, these regulations were expanded to include all secondary packaging. Accordingly, manufacturers, distributors, and retailers are now required to take back and recycle secondary packaging (e.g., cardboard boxes, blister packs, and other product packaging such as that used to prevent theft, for protection, and for promotional purposes) from consumers. Since 1993, however, the Ordinance was further expanded to included *all* types of consumer packaging used to contain and transport goods from the point of sale to consumption. The most recent regulations created an option that exempts manufacturers from these regulations.

Specifically, the Packaging Ordinance states that manufacturers, retailers, and distributors (both domestic and foreign) may be exempt from taking back packaging if they participate in an established national waste management program. Such a program had been in existence in Germany since 1990, under the Duales System Deutschland GmbH (Dual System of Germany). The Duales System is a non-profit organization set up to collect, sort, and recycle post-consumer packaging from both households and small businesses throughout the country. By participating in the Duales System program, manufacturers may label their products with the Green Dot. A Green Dot indicates to the consumer that the manufacturer of the product participates in the program, and that instead of returning the packaging to the manufacturer or distributor, the packaging should be collected, sorted, and recycled through the Duales System program.

The new packaging laws in Germany have been successful in reducing packaging and encouraging the use of recycled and re-fillable packaging. Foreign companies have expressed concern, however, that these laws are a possible trade barrier. The claim has also been made that Germany is developing and implementing these packaging laws without consultation from or concern for the European Community and its goal for a Single European Market.

Recent Developments

The program reports that there have been no major changes in the methodology by which the Green Dot is granted since 1995.

Program Summary

Although the Green Dot operates as a response by industry and trade associations to avoid individual take-back regulations, its overall goal is the prevention of excess, unnecessary waste. In this regard the Green Dot fee structure acts as an incentive for manufacturers to reduce the amount

of packaging they use for their products in the design of products and packaging. Manufacturers wishing to obtain the Green Dot must pay a license fee to the Duales System. Fees are based on the type and weight of the packaging materials. In general, the heavier and more difficult it is to recycle the packaging, the higher the license fees. Fees vary according to the packaging materials, with plastics having the highest fees and natural materials and glass having the lowest fees. License fees range from about DM 3.00/kg to DM 0.15/kg ($1.70 US to $0.08 US).

The Duales System collects glass, paper, cardboard, and lightweight materials such as polystyrene, plastic, beverage containers, composites made of a mixture of materials, aluminum, and tin-plate. The Duales System has established two types of collection systems, which can be modified to accommodate existing local and regional collection systems. The first, and most widespread, is the curbside system where consumers collect Green Dot packages (except glass, paper, and cardboard) in the yellow bags or bins provided to their households. The bags/bins are placed on the curbside to be collected during the regular garbage pick-up. Glass, paper, and cardboard are collected separately in special bins/containers set up in the neighborhood -- glass is often separated according to color. In the curbside system, the consumer does the basic initial sorting of the packaging. The alternate system is the "bring" system where consumers bring all their waste packaging to central collection stations. Under the "bring" system all packaging is sorted by Duales System employees into different bins, which are set up for the different packaging materials.

Once collected, the materials are sorted by waste management companies under contract to the Duales System. Once the materials have been sorted, they are ready to be shipped to recycling facilities. According to the Duales System Deutschland GmbH, the recycling goals set by the Packaging Ordinance have been met since the Green Dot program began. Since 1992, one year after the Packaging Ordinance went into effect, the weight of packaging consumed (i.e., not for recycling) in Germany has steadily declined. Because of the take-back requirements set by the Ordinance, and the license fee structure, manufacturers have been motivated to reduce the weight of their packaging in order to reduce their eventual recycling costs.

Program Methodology

The Duales System collects glass, paper, cardboard, and lightweight materials such as polystyrene, plastic, beverage containers, composites made of a mixture of materials, aluminum, and tin-plate. These product categories were chosen based on evaluations of their environmental impacts, as well as their potential for reuse and recyclability. The Duales System establishes criteria for these product categories, which manufacturers must adhere to for their packaging materials in order to be part of the program. That is, packaging made with paper products must meet certain standards set by the program in order for that packaging to be awarded the Green Dot, and therefore be accepted for recycling through the program. Product criteria are based on previous studies conducted for

these product categories, as well as information from other programs' life-cycle assessments for the categories, independent testing, and information from producers themselves. Criteria are peer-reviewed, and peer-reviewed critiques and Duales System's responses to them are available to the public.

Other Information

Unless companies participate in the Green Dot program, they are required to take back their packaging according to the Packaging Ordinance. This take-back burden is far greater for companies that ship their products long distances to Germany -- they conceivably pay the transportation costs of shipping the packaging back to the country of origin. Many exporting countries, particularly developing countries, may not have the infrastructure or the technical ability to meet all the packaging standards set by Germany. One alternative that foreign companies may opt for is hiring a German company to overcome the cost burden or to meet the standards. For example, the German company would be responsible for packaging the imported good(s) in Germany so that they comply with local requirements. In addition, the company would take back the returned packaging.

Although foreign products are not required to carry the Green Dot, many manufacturers exporting to Germany claim that the domestic demand for the Green Dot label places imported goods at a market disadvantage. (European Union based importers can also apply for the Green Dot.) Additionally, distributors and retailers may shy away from foreign products without the Green Dot because otherwise the responsibility of recycling the packaging falls on the distributors/retailers.

References

Federal Government of Germany, 1991, *Ordinance on the Avoidance of Packaging Waste (Packaging Ordinance - Verpackungsverordnung - VerpackVO) of 12 June, 1991.*

Duales System Deutschland GmbH, March 1996, *Recycling Data - Techniques and Trends.*

Duales System Deutschland GmbH, May 1996, *Changes and Developments - Plastics Recycling Today*.

Duales System Deutschland GmbH, December 1996, *Info-Grafik: Green Dot License Fees.*

Duales System Deutschland GmbH, April, 1997, *Press Information: Green Dot Presents 1996 Materials Mass Flow Verification.*

Duales System Deutschland GmbH, January, 1996, *Life-Cycle Analysis on Recycling and Recovery of Post-Consumer Plastics.*

Bernhardt, K., 1992, *Germany's New Packaging Laws: The "Green Dot" Arrives*, Business

America, vol. 113, no. 4, pp. 36-37.

Cotter, M. J., Henley, J. A. Jr., 1995, *Germany's "New" International Strategic Weapon: Environmentalism,* Multinational Business Review, vol. 3, no. 1, pp. 93-97.

INDIA'S ECOMARK

Introduction

As part of an effort to improve environmental quality and to increase environmental awareness among industries and consumers, the Indian Parliament initiated a voluntary ecolabeling program known as the Ecomark in February 1991. The Ecomark is a government operated seal-of-approval program for environmentally-preferable consumer products. The Ministry of Environment of Forests (MoEF), with the technical advice of the Central Pollution Control Board (CPCB), manages the program. Unlike many other international ecolabeling programs that are independent, India's Ecomark is tied with the BIS's product quality standards. In order to be Ecomark certified, products must meet these product quality standards, as well as product-specific environmental criteria set by the Ecomark program. In meeting Ecomark requirements, manufacturers will also have both the BIS's quality standards label on their products.

The objectives of the Ecomark program are fivefold: 1) to provide manufacturers and importers an incentive to reduce the adverse environmental impacts of their products, 2) to reward genuine initiatives by companies to reduce the adverse environmental impacts of their products, 3) to assist consumers in becoming environmentally responsible in their daily lives by providing them with information on environmental impacts that they can incorporate in their purchasing decisions, 4) to encourage citizens to purchase products that have fewer environmental impacts, and 5) to ultimately improve the quality of the environment and encourage sustainable management of resources.

The Ecomark label is seen as a "movement of consumers" and is therefore given exclusively to consumer products. Interestingly, even though (as of January 1997) sixteen product categories had been selected for the Ecomark, only one product, in the detergent product category, has been awarded the Ecomark. So far, however, there are no products available on the market with the ecolabel; the manufacturer of the detergent product that had been awarded the Ecomark did not market the product with the ecolabel. According to Dr. Sudhir K. Ghosh, Member Secretary of the Ecomark Technical Committee, "Indian industries are not coming forward to get eco-certification of their products, though they are involved in the process of criteria development." Some attribute this to the costs involved in applying for the Ecomark and the numerous regulatory requirements manufacturers must meet before being awarded the ecolabel. Other reasons may include industries' concerns about the Ecomark program, which are outlined below.

Recent Developments

The program reports that there have been no significant changes in the methodology for determining award criteria since the beginning of the program. Due to the lack of response from manufactures (and consumers) regarding ecolabeling, however, the Ministry of Environments and Forests has recently (August 1997) launched a market survey for ecolabeled products.

Program Summary

There are three committees involved with product category selection, criteria development, and award of the Ecomark. First, an inter-ministerial Steering Committee in the Ministry of Environment & Forests determines the product categories to which an Ecomark may be granted. The Committee is also in charge of promoting of the labeling scheme to manufacturers and consumers. Once the Steering Committee has made proposals for product categories, a Technical Committee in the Central Pollution Control Board determines the specific product to be included under the Ecomark scheme.

The Technical Committee is the central committee for the Ecomark scheme and constitutes sub-committees for the development of Ecomark criteria for each proposed product category. The Technical Committee provides technical assistance and recommendations to the Steering Committee for finalizing product categories, and is also in charge of developing product specific criteria, based on life-cycle assessments, wherever possible. Once criteria are finalized, the Bureau of Indian Standards and/or the Directorate of Marketing translates the product criteria into Indian Standards, assesses and certifies the products, and coordinates (via testing and contractual arrangements) with manufacturers wishing to use the Ecomark label on their products.

Manufacturers wishing to obtain the license to use the Ecomark label on their products submit applications to the Bureau of Indian Standards and deposit a non-refundable fee approximately Rs. 500 ($14.00 US) for each product. The applicant is responsible for any testing and inspection costs, if required. In addition there is a usage fee, based on the annual production of the product, which is determined by the BIS. If the manufacturer is found to be in compliance with the award criteria, the BIS draws up a contract for use of the Ecomark. The label is initially granted for one year, but there is the option to renew the license for the Ecomark label for a fee of Rs. 300 ($8.30 US). If a manufacturer illegally uses the Ecomark, without BIS certification, they are subject to punishment as per provision of the Bureau of Indian Standards Act of 1986.

Program Methodology

Once specific products are selected for the Ecomark, product criteria are developed. In general, previous literature and other programs' life-cycle assessments are used in conducting a simplified life-cycle assessment that examines products in terms of their main environmental impacts. These include: the product's potential for generating less pollution than other comparable products; whether the product is recycled, recyclable, or made from recycled materials or whether it is biodegradable; and whether it makes significant contributions to saving non-renewable resources. Products are assessed specifically on their use, potential for reuse and recyclability, environmental impact during final disposal, and their ingredients or their materials restrictions. India, however, does not follow SETAC guidelines in its LCA. The Ecomark Technical Committee may also plan

to incorporate the International Standards Organization (ISO) 14020 guidelines and general principles once these are finalized. Draft criteria are peer-reviewed and peer-review critiques are available to the public.

Furthermore, certain general requirements have to be met in order to grant the Ecomark label. First, products must meet the Bureau of Indian Standard's product quality, safety, and performance standards. Second, manufacturers of the product must provide evidence that they are in compliance with India's Water, Air, and Environmental Protection Acts and, if applicable, with the Prevention of Food Adulteration Act of 1954 and the Drugs and Cosmetics Act of 1940. Third, the product must display a list of all the critical ingredients in descending order of quantity present. Fourth, the manufacturer may opt to display (on the packaging) the criteria upon which the Ecomark label is based. Fifth, instructions on the product's proper use, performance, and disposal may be shown on the product's packaging as well.

Other Information

The overall response to the Ecomark program within India itself has been quite limited and manufacturers are hesitant to apply for the Ecomark label. Several factors are seen as possible causes for this hesitation. First, the Ecomark scheme is a self-financing program, requiring manufacturers to pay for the application, testing, licensing fee, and renewal costs involved in certification. Some estimates indicate that these costs can amount to a 10 percent increase in a manufacturer's production costs -- which are not guaranteed to be returned in increased profits. Second, products have to comply to BIS's quality standards before being able to apply for the Ecomark. The BIS standards add another layer of regulation and approvals for manufacturers, which are perceived as a burden with few immediate benefits.

Additionally, industry has complained that India's Ecomark has not done enough to involve it in product criteria development. Industry feels the Indian Government has "rushed through" with the Ecomark. Industry feels that the labeling program will not help environmental improvement if criteria concentrate on single issues, or if they are based on other programs that do not take the local situation into account. Industry also says that the labeling program inhibits innovation that comes with consumer goods production and can, therefore, be a hindrance to environmental improvements. Finally, industry feels that because of the lack of consumer awareness of environmentally preferable products, the Ecomark program may send consumers the "wrong" message by indicating to consumers that non-Ecomark labeled products are not environmentally safe.

Indian exporters feel that many of the product categories chosen for Ecomark, with the exception of textiles and certain food items, do not reflect India's major export products for which an Ecomark might be of value. Several manufacturers have, in fact, adopted the ecolabeling standards of their importing customers' countries in order to operate in those markets. The textile and leather products sectors (two of India's largest exports) have made efforts to conform to ecolabeling standards in EU countries such as Denmark and Germany. Such conformance has been possible

through bilateral support from these foreign governments. In response, the Indian Government is now in the process of developing award criteria for the leather and leather products categories.

With regard to trade, the Indian Ecomark program does recognize the increasing popularity of ecolabeling schemes around the world, and the Ecomark Steering Committee recognizes that, "whilst there is a need for greater transparency, voluntary ecolabeling schemes should not be brought under the scope of the technical barriers to trade agreements." As a result, the Indian Government stresses that the Ecomark program is a "purely voluntary scheme open to all manufacturers, both domestic and foreign." According to the Ecomark Technical Committee, in order to make the scheme more globally transparent, much of the information on the Ecomark can be found on the World Wide Web (http://www.nic.in/envfor/cpcb/cpcb.html). The site was created by the Central Pollution Control Board in collaboration with the National Information Centre in India.

The Indian government has already prohibited the handling of 70 "azo" dyes, in response to new regulations by Germany and the EU in place as of early 1996. About 70 percent of dyes manufactured and used in textiles in India contain 'azo' dyes, and about 25 percent (190) of these have been banned in Germany and the EU. Germany and the EU are two of India's largest markets for garments and textiles (10 percent of India's textiles and textile goods exports go to Germany and 50 percent are sold to the EU as a whole). These new regulations are likely to affect India's exports in these sectors.

To help exporters understand these new regulations, the Indian Government has set up committees in charge of information dissemination to trade and industry, legal measures, research and development, and identification of substitutes. The committees have asked trade and research associations, export promotion councils, state governments, and other textiles-related organizations, to produce outreach materials (e.g., pamphlets, leaflets, publications, videos, advertisements in daily publications, workshops, and seminars), in both English and local languages, to provide manufacturers with information regarding the regulations.

India's Ministry of Environment and Forests has issued restrictions on manufacturing of the 190 banned dyes, as well as placing these dyes on a list of restricted imports under India's Export-Import policy. In addition, a provision in the Textiles (Development and Regulations) Order of 1993 will be included specifying which toxic or harmful dyes and chemicals should not be used in the manufacturing of textiles. In addition, a list of the banned dyes, a list of safe substitutes, product related eco-standards, and a list of guidelines for manufacturing environmentally preferable textiles have been distributed.

The Department of Chemical Technology at the University of Bombay, the Technology Institute of Textiles and Sciences, and other research institutions are requested to identify toxic chemicals and dyes to be phased out from textile manufacturing. Additionally, numerous laboratories have been set up throughout textile centers in the country to perform tests on the banned dyes and to find possible alternatives.

Finally, in an effort to achieve harmonization and mutual recognition with other ecolabeling programs, the Indian Ministry of Commerce presented a paper at the "Seminar on Trade Effects of Eco-labelling" in Bangkok, Thailand, in early 1997. The Ministry suggested forming an organization, called the Asian Environmental Network (AEN), similar to the Global Ecolabelling Network (GEN) but specifically for the Asia Pacific region. They proposed that AEN could be set up for better exchange and dissemination of information about ecolabeling, and to work toward greater harmonization among ecolabeling programs in Asia. The Ministry of Commerce suggested that AEN could set up generic ecolabeling standards for the Asia Pacific Region, as well as provide technical assistance to countries trying to further develop or who are trying to set-up ecolabeling programs. Also, information on mutual recognition, equivalency, new technologies, new products, and regional protocols could be disseminated via a newsletter or on the Internet. AEN is still in the development stages, however, and has not yet been formally established.

References

Dr. Sudhir Ghosh, Additional Director and Member Secretary, Ecomark Technical Committee. Personal communication with Abt Associates. November, 1997.

Bhat, A. N., *Ecomark Issues and Role of Indian Industry*, National Seminar on Green Purchasing and Ecolabeling.

Ministry of Commerce, January/February, 1997, Seminar on Trade Effects of Eco-Labelling - *India: National Experience on Eco-Labelling*, Bangkok, Thailand.

Central Pollution Control Board, 1997, *Ecomark: A Scheme on Labelling of Environmentally Friendly Products*.

Central Pollution Control Board, *Ecomark Scheme of India*, Ecomark Homepage, http://www.nic.in/envfor/cpcb/cpcb.html.

Singh, Y.P., and Phalgumani, G.R., 1995, *Meeting Eco-requirements for Export: Example of Indian Textiles*, International Trade Forum, no.3, pp. 12-15.

Ministry of Environment and Forests, Department of Environment, Forests and Wildlife, 1991, Resolution, published in *The Gazette of India*, no. 71, part II, section 3, sub-section i, New Delhi, Thursday, February 21.

Product Categories

Final Categories

Soaps and detergents
Paper
Food items
Lubricating oils
Packaging materials/packages
Architectural paints and powder coatings
Batteries
Electrical/electronic goods
Food Additives
Wood substitutes
Cosmetics
Aerosols Propellants
Plastic Products
Textiles

Categories Under Development

Leather and Leather products
Fire extinguishers
Household pesticides

JAPAN'S ECOMARK

Introduction

The EcoMark program, the second oldest ecolabeling program after Blue Angel, was started in February 1989 as a positive seal-of-approval program to "disseminate information on the environmental aspects of products and to encourage consumers to choose environmentally sound products." The program is implemented by the Japan Environment Association (JEA), a non-governmental organization, under the guidance of the Environment Agency. As of June 1997, the program has issued 2,031 awards in 69 product categories.

Two studies have been conducted to evaluate the influence of the EcoMark. Both indicate that the EcoMark is becoming well known. The first was a survey of local governments, distributors and companies with EcoMark-approved products, conducted by the JEA in the Spring of 1991. More than half of the companies who had acquired the logo did so to improve their corporate image, citing also "requests from customers and increased sales." Almost all local governments were aware of the program, compared to only 40 percent of distributors. The other study, a 1990 public opinion poll conducted by the Prime Minister's Office, found that 22.3 percent of the respondents said that they were familiar with the EcoMark. By 1993, this rate had jumped to 53 percent.

Recent Developments

The EcoMark program has undergone several changes in the past few years. First, the number of awards has actually decreased. Two product categories have been eliminated: spray containers not containing CFCs, abolished December 1993; and cans with stay-on tabs, abolished June 1995. In addition, consolidation of the pulp and paper industries has resulted in a decrease in the number of paper brands receiving awards (decreasing number of paper companies leads to decreases in the number of paper brands). The program has recently added two product categories, printing ink and recycled suitcases, to its list. Because the program seeks to label a small percentage of products within a product category, categories can either become more stringent or be abolished altogether if the labeled product market share is too large. The EcoMark program is in the process of revising 16 product category criteria to become more stringent based on new manufacturing procedures. It is expected that more currently labeled products reapplying for the label will fail, limiting the market share of awarded labels to only those products meeting the very highest environmental standards.

The program has also revised its methodology for selecting product categories and awarding labels. Originally, the EcoMark program based selection on the finished products' attributes, and did not incorporate the manufacturing processes of individual products within a category. In this way the logo was used more to call attention to products that were part of "an ecological lifestyle," than to weigh the relative impacts of consumer products throughout the life cycle. The process was also generally not open for comment from the public. These procedures were revised in March 1996 to

conform to the draft ISO 14024 standards. The program now employs the use of life-cycle analysis, consults with related parties, and provides for public review of draft criteria.

Program Summary

The EcoMark Secretariat is located within the Japan Environment Association, as are the two committees (the Promotion Committee and the Expert Committee) responsible for administering the program. The Secretariat sets up a working group of experts and concerned persons for each product category under consideration. This group then establishes draft criteria using life-cycle analysis, which are publicized in *EcoMark News* for 60 days for public comment. The draft criteria are submitted, with the incorporated suggestions, to the Promotion Committee (composed of specialists in environmental conservation, administrative agencies, consumer groups, and relevant enterprises), which then approves or rejects the criteria.

Once award criteria have been set, confidential product applications are accepted. Manufacturers must supply relevant information to the Expert Committee (composed of experts in environmental impact assessment), but the Committee may request further testing by a third party. If a product is awarded a label, a two-year contract is signed with the JEA. While JEA does not directly monitor for misuse, it relies on other manufacturers, administrative organizations, and consumer organizations to inform it of possible instances of misuse.

Unlike most environmental certification programs, the fee charged for use of the award is based on the retail price of the product, not the number of units sold or the market share. The annual license fee is between 40,000 (348 USD) and 100,000 yen (870 USD). Additionally, the Japanese program is unusual in that there is no application or advertising fee.

Program Methodology

As mentioned above, the Japanese EcoMark program recently changed its methodology to incorporate life-cycle assessments, specifically a life-cycle matrix, which considers the environmental impacts within each stage of the product life cycle. This change was made as a response to draft labeling standards being developed by the International Organization for Standardization (ISO). In assessing products, the EcoMark utilizes literature and other programs' life-cycle assessments, as well as independent testing and studies and information from participating producers. Additionally, information about product criteria from other programs may also be adopted by the Japanese EcoMark program, where applicable. Japan does not follow SETAC guidelines in their life-cycle-analysis.

Once product selection by the EcoMark office and the Expert Committee is completed, the EcoMark office sets up ad hoc working groups for each product group to develop labeling criteria. Product selection is based on proposals from manufacturers as well as the use of a political process in consideration with the environmental impacts of the product. Product criteria, based on the life-cycle matrix approach and at each stage of the product's life cycle, considers the following factors:

extraction and processing of raw materials; manufacturing, transportation, and distribution of the product; the product uses; potential for reuse; potential for recycling; and emission of wastes, toxic substances, and harmful pollutants.

Other Information

The program is open to participation by small and medium sized businesses; more than 75 percent of the manufacturers awarded are small or medium in size.

JEA is a member of GEN, which it finds very useful, not only for information exchange but also for assisting ecolabeling programs worldwide with program information and for the removal of unnecessary trade barriers. When criteria are being developed and revised, JEA collects data on all criteria in similar product categories via the GEN database and uses these to guide its development. In accordance with the draft ISO 14024 standards, existing criteria are revised within three years (16 of the 69 current award criteria are in the revision stage).

EcoMark has a strong relationship with procurement programs. For example, the central government is in the process of establishing guidelines for green procurement and references the EcoMark as one possible source of information. Some of the more progressive local governments have already established green procurement guidelines and also reference the EcoMark.

According to JEA, the program has not been involved in any critical trade conflicts to date. In fact, JEA has shown initiative in addressing trade issues before a conflict can arise. For example, in 1996, JEA made a concerted effort to get input from the US on the trade implications of developing product categories for personal computers and copy machines. By including the US in its process, it hoped to avoid any trade conflicts.

Similar to the ecolabeling program, the Green Purchasing Network (GPN) was created in February 1996. The GPN is sponsored by the Environment Agency of Japan, and consists of organizations committed to reducing stress on the environment by promoting green purchasing. Thus far, 425 companies, 107 local governments and government agencies, and 97 non-profit organizations are members. The GPN establishes purchasing guidelines in product categories, publishes annual guidebooks concerning the environmental impact of products, publishes a quarterly newsletter, and conducts meetings. Although the GPN program and the EcoMark are independent of each other, the GPN has a significant influence on the EcoMark.

References

US Environmental Protection Agency. Correspondence with Japan Environment Association. November 1996.

Hashizume, Shigeyuki, *The EcoMark System*, Convertech Japan, 1994.

Hashizume, Shigeyuki, Japan Environment Association. Personal communication with Abt Associates. Summer 1997.

Hashizume, Shigeyuki, Japan Environment Association. Presentation of the Japanese EcoMark. Global Environmental Labelling Network Annual Meeting. September, 1997.

Japan Environment Association. Green Purchasing Network background documents. August 1997.

Japan Environment Association. *The Eco Mark Program.*

Japan Environment Association. *The Eco Mark System.* September 1991.

Japan Environment Association. *Certification Criteria for Eco Mark Products*.

Japan Environment Office. EcoMark Office. *Offset Printing* Ink. Product Category No. 102 for the EcoMark Program. July 1997.

Product Categories (number of awarded products in parentheses)

Final Categories

Spray products not containing CFC's (abolished)
Triangle strainers for kitchen sinks (16)
Strainers for kitchen sinks (28)
Filter bags for kitchen disposal (155)
Absorbents for used cooking oil (34)
Composting containers (30)
Magazines and books on environmental problems (20)
Toilet paper using 100 percent recycled paper (85)
Returnable containers (11)
Containers for collecting used bottles (0)
Soap made from used cooking oil (47)
Products made from used lumber (25)
Products made from used plastic (211)
Cans with stay on tabs (abolished)
Recycled paper for office use (102)
Recycled paper for printing (237)
Recycled paper for stationary (137)
Recycled paper for packaging (184)
Hot water supply systems using solar energy (3)
Cellulose sponges (39)
Cloth diapers for infants (44)

Products made from used tires (33)
Thermal insulation for buildings (3)
Tissue paper using recycled paper (11)
Biodegradable engine oil for two-cycle engines (7)
Products using solar battery modules (2)
Straw matting (9)
Flow-reducing valves and water-saving faucets (13)
Soundproof and vibration proof mats (3)
Blast furnace and fine powder slag and blast furnace cement (7)
Refillable containers (60)
Unbleached coffee filters (10)
Paint containing no aromatic hydrocarbon compounds (87)
Filters for cooking oil (6)
Boards made from waste wood (51)
Waste can collectors (7)
Drainage fixtures for rainwater dissipation (7)
Storage tanks for rainwater (0)
Packing materials made from recycled pulp (35)
Wallpaper, fusuma paper and shoji paper made from recycled pulp (36)
Filter bags of recycled paper for vacuum cleaners (7)
Tiles and blocks made from waste material (12)
Household gloves of natural rubber (22)
Unbleached clothes. bed linen, and towels (32)
CFC recovery systems for air conditioners (2)
Biodegradable hydraulic oil (10)
Biodegradable lubricant oil (18)
Cloth shopping bags (20)
Multi-pass thermal transfer ribbons (1)
Wooden products made of culled logs and small-diameter logs (13)
Textiles made of waste fibers (15)
Briquettes made of waste (2)
Low-waste printers for business machines (5)
Replaceable ink cartridges and ribbon cassettes (3)
Resource conserving containers for edible oils (12)
Recycled paving materials (4)
Fancy sound-absorption panels of iron-slag mineral wool (5)
Laminated fiberboard of recycled pulp (7)
Combustion apparatus using waste cooking oil (0)
Buffer materials made of culled logs and used timber (0)
Vegetation supporting concrete paving blocks (1)
Energy saving gas leak detectors (2)
Load-stabilizing devices for energy conservation (4)
Products made from recycled cullet (14)

Building materials of fly ash (1)
Clothing made of used PET resin (10)
Inert-gas smothering systems and apparatuses using no ozone-layer depleting gases (3)
Easily repairable office chairs (7)
Low-benzene gasoline for vehicles (2)
Agricultural mulch sheeting of recycled pulp (1)
Solar-powered clock or watch (1)

SOUTH KOREA'S ECO-MARK

Introduction

According to the South Korean Ministry of the Environment (MOE or Ministry), rapid industrialization and urbanization during the last three decades and South Korea's rapid economy growth may have contributed in deteriorating the country's environmental conditions. As a result, the Korean government established "Harmony between Environment and Development" as a main policy goal of the country, with emphasis on pollution prevention and resource management. To realize this policy, the Korean Ministry of the Environment launched its ecolabeling certification program, known as "Eco-Mark," on June 1, 1992. Eco-Mark is a voluntary program that awards a seal of approval to environmentally preferable products. It is primarily intended to encourage companies to promote the design, production, marketing, and use of products that have reduced environmental impact, as well as to provide consumers with information to make environmentally sound purchasing decisions.

Between 1993 and 1994, the number of Eco-Mark product categories increased from 12 to 36, and within those categories the number of products awarded the Eco-Mark label increased from 96 to 219.

Recent Developments

Korea recently (as of June 1997) became one of the newest members of the Global Ecolabelling Network (GEN).

Program Summary

The Korean Eco-Mark program is administered by the Korean Ministry of Environment. New product category suggestions are directed to the Ministry's Technology Development Division. This Division makes the final decision as to which product categories are suitable for the Eco-Mark. The Ministry then drafts the award criteria with technical assistance from the Korean Academy of Industrial Technology (KAITECH). The draft criteria are released to the public for comments during public hearings. Based on the comments received, criteria are revised and finalized.

Once criteria are finalized and released to the public, manufacturers wishing to obtain the Eco-Mark can apply to be eco-certified. A "practical committee" within the Korean Environmental Labelling Association (KELA), (who handles manufacturers' applications) is in charge of awarding the label to companies wishing to obtain eco-certification for their products that meet the prescribed award criteria.

Once the product fulfills the criteria, it is eligible to receive the Eco-Mark. In addition to the initial application fee of 30,000 won ($33 US), the user of the Eco-Mark must pay an annual fee ranging from 300,000 won to 1,000,000 won ($330 US - $1,090 US), based on the product's annual sales (more expensive goods command a higher fee). This fee, collected by the KELA, is used to maintain the Eco-Mark program as well as to increase public awareness of environmental issues.

Program Methodology

The Eco-Mark program has found that, in practice, the significant data requirements of the life-cycle assessment approach typical for determining award criteria are difficult to meet. The Korean Eco-Mark's approach to product certification is therefore based on defining the single most important environmental impact for each product category.

References

United Nations Council on Trade and Development (UNCTAD), International Trade Division, Trade and Environment Section, 1993. *Eco-labelling and International Trade: Preliminary Information from Seven Systems (Draft),* Geneva, Switzerland, May 19.

Korean Environmental Labelling Association (KELA), *The Eco-Labelling Program in Korea -- Its administrative structures and procedures*, Eco-Mark Homepage, http://www.gcc.go.kr/ehome/ecomark.html.

Product Categories

Final Categories

Products made from recycled paper
Toilet paper
Products made from recycled plastic
Cloth diapers for babies
Non-asbestos brake lining and clutch facing
Filters for kitchen sinks
Non-bleached and non-dyed towels
Valves for adjusting flow and water saving-type faucets (including water saving tops)
Packaging materials using wastes
Soap made from waste edible oils
Bricks made from waste lime
Construction materials made from waste glass
Products made from used tires
Bulb-type fluorescent lamps
Cloth shopping bags

Construction materials made from waste stone powder
Biodegradable engine oil for two-cycle engines
Biodegradable hydraulic oil
Bricks made with inorganic sludge
Palette made with waste wood
Water-economizing toilet stool
Low sulfur petroleum
Building materials using remnants from burning
Blast furnace cement
Returnable can collectors
Refillable containers
Water-economizing fittings for toilets stools
Biodegradable sponges
Machines for recycling used antifreeze
Gravel made of waste materials
Oil filters
Electricity saving low mercury fluorescent bulbs
Plastic containers with same material log attached
Solar water heaters
Low pollution ferro-concrete pipe
Energy efficient refrigerator with no CFCs

MALAYSIA'S PRODUCT CERTIFICATION PROGRAM

Introduction

The Product Certification Program, Malaysia's national environmental labeling program, was launched in 1996 by the Standards and Industrial Research Institute of Malaysia (SIRIM). It is a single-attribute, seal-of-approval product certification program. As of March 1997, SIRIM's certification activities were delegated to a fully-owned subsidiary, SIRIM Quality Assurance Services (SIRIM QAS). This delegation was undertaken to avoid any conflicts of interest with SIRIM's other activities, namely testing, research, standards development, and measurement services. SIRIM consults regularly with the Ministry of Environment, which is in charge of Malaysia's overall environmental policy. Although SIRIM is not directly under the auspices of the Ministry of Environment, SIRIM strives to coordinate its programs with Malaysia's official environmental policy in this way.

SIRIM plans to develop (by 1998) certification criteria for lighting and appliance energy-efficiency, as well as detergent biodegradability. To date, however, its only fully-developed product criteria, published in July of 1996, are for CFC-free refrigerators. The impetus for developing these criteria was the Montreal Protocol, which called for the phasing out of CFC usage worldwide. The Malaysian government responded by imposing a deadline of 1999 for the complete phaseout of CFC use. However, Malaysian refrigerator manufacturers that had developed CFC-free refrigerators before the deadline found themselves suffering from market share declines attributable to the higher prices they had to charge for the more expensive CFC-free technology. These manufacturers sought the certification to help consumers differentiate among manufacturers' environmental performance and to encourage consumers to support the CFC-free technology despite the higher prices. One large domestic manufacturer has had its entire product line certified. SIRIM is currently working to certify a second manufacturer's refrigerators. Because of the 1999 phaseout, however, it is expected that the CFC-free certification will become obsolete and will eventually be phased out as well.

Program Summary

Selection of product categories begins when a request for a product category is submitted by the public. Though anyone can request product categories, manufacturers wishing to promote their own products are usually the ones submitting requests. Certification requests may be prompted by demand in either the domestic or export market. Most Malaysian refrigerators, for example, are bought and sold domestically. However, the requests for detergent biodegradability labeling and lighting and appliance energy-efficiency labeling were driven by Malaysia's large export market. SIRIM then selects product categories based on market presence and potential benefit, determined through discussions with both consumers and manufacturers.

Product criteria are established by an internal committee of SIRIM professionals who consult foreign certification programs for information on similar products. These criteria are then presented to a government-appointed advisory board composed of various stakeholders including the government, professional bodies, and trade associations. Through a consensus-based decision-making process, the criteria are revised and released, officially launching the certification program. After their release, the criteria can be revised again at any time by the advisory board, which meets at least three times each year.

Participation in the program is completely voluntary and open to both domestic and foreign-made products (although, to date, no submissions have been made from foreign producers). SIRIM evaluations require an at-cost fee, and include both product testing at SIRIM's in-house lab, and site visits to assess the manufacturing process.

Upon certification, manufacturers receive a certificate listing the manufacturer's name, the certified product's brand and model, and details of its main components. The certificate also specifies the type of certification issued. The certificate allows holders to print the certification category (e.g., "CFC-Free") on product labels. Certificate holders are subject to continued surveillance through annual inspections by SIRIM, to ensure that certified products continue to satisfy the requirements of the certification program.

Program Methodology

SIRIM's product certification program is a single-attribute, seal-of-approval program. Product categories are submitted by the public (including manufacturers) and chosen based on market demand for product certification, as assessed through periodic discussions held with consumers and manufacturers. Product criteria are based on a single environmental attribute, such as being CFC-free, energy-efficient, or biodegradable. The certification process involves both on-site inspections and product testing by SIRIM employees.

Other Information

In a separate environmental management system (EMS) certification program, SIRIM has made reciprocal arrangements with two foreign certification programs in the interest of companies who export to or from Malaysia. One arrangement is with the Japanese Audit and Certification Organization for Environment (JACO), with whom SIRIM conducts joint facility inspections for EMS certification. Since many Japanese companies have Malaysian branches, this arrangement reduces the expenses for Japanese and Malaysian inspectors conducting EMS certification. SIRIM has another arrangement with the Canadian Standards Association (CSA) in which Malaysian companies, inspected by SIRIM according to CSA standards, are granted the CSA's EMS certification. This arrangement is highly beneficial to Malaysian manufacturers because of the

large volume of Malaysian exports to North America. This system makes it possible for Malaysian companies to obtain EMS certification that is more widely recognized in North America where they conduct the bulk of their business, without the expense of flying CSA inspectors from Canada to Malaysia.

Malaysia has had significant involvement in ISO activities, having been a member of ISO Technical Committee 207 since 1994 and also a member of each of the three sub-committees, of which SC3 deals with environmental labeling. The Malaysian ISO delegation consists of a 16-member committee, including one SIRIM representative.

A number of industries, namely textiles, timber, dyeing, rubber, and electronics, have developed private industry-specific environmental management certification programs. The private Malaysian Timber Industry Board has also proposed a timber certification program and conducted a limited pilot program. National labeling standards for such products may be developed by SIRIM in the future, though there are no concrete plans to do so as of yet.

References

Heinke, Gary W. et al., *Final Report: Development of an Eco-label Certification Programme for Hong Kong/ RC96-19*. Hong Kong: Research Centre of the Hong Kong University of Science and Technology, June 1996.

Raj, Rajinder, General Manager of SIRIM QAS. Personal communication with Abt Associates, Summer 1997.

SIRIM. *Certification of CFC-Free Freezers and Refrigerators*. August 1997.

Product Categories

Final Categories

Refrigerators

Under Development

Detergents
Appliances
Lighting fixtures

THE NETHERLANDS' STICHTING MILIEUKEUR

Introduction

The growing interest in environmental issues throughout the 1980s in the Netherlands encouraged the Ministry of Housing, Physical Planning and Environment, and the Ministry of Economic Affairs to create the "Stichting Milieukeur," an independent foundation for voluntary environmental labeling, in 1992. Prior to the creation of the Dutch ecolabel, the government had established the Environmental Advertising Code to discourage the use of false environmental advertising claims. The Stichting Milieukeur (the Environmental Review Foundation) built upon the public policies that are the basis of the Environmental Advertising Code by creating a seal-of-approval program.

The Stichting Milieukeur is made up of representatives from government, consumers, manufacturers, and retail, trade, and environmental organizations. Although the EU, of which the Netherlands is a member, has an ecolabel program, the Dutch government proceeded with its own program to better accommodate goods and services unique to the Dutch market. It retains ties to the EU program, however, as a Competent Body. As of October 1997, the Stichting Milieukeur has set and published award criteria for 50 product groups, and has awarded the Milieukeur to 16 of these groups. The Milieukeur has also been awarded to foreign companies in the copy paper and chairs product categories.

Recent Developments

The Stichting Milieukeur has not changed much since its inception. The primary change has been an increase in reliance on market trends. More emphasis is being given to products categories that have a strong market presence where competition for an award can have the greatest environmental gain, for example, paper hand dryers, cotton hand dryers, and toner cartridges.

Program Summary

Although the program was founded and is supported by the Dutch government, the Stichting Milieukeur operates the environmental labeling program independently. The Milieukeur Board, assigned the essential role in selecting product categories and establishing award criteria, is composed of representatives from the government and manufacturers, consumers, retail trade, and environmental organizations that founded the Milieukeur. In addition to the Board, a certifying institution, recognized by the Board and requested by the manufacturer submitting the product for evaluation, is responsible for testing potential products based on a life-cycle assessment and assessing whether or not a product meets the defined standards.

The first phase in the award process is coordinated by the Stichting Milieukeur. Manufacturers, consumer groups, trade associations, or any other interested party can submit a request for the creation of a new product category to the Stichting Milieukeur. The board may then approve or

reject this application based on a screening study, which may be contracted to an outside company, that determines the expected environmental gain associated with the product category. Criteria are developed only for product groups in which there are clear differences in environmental quality among products in the same category. If the product category is judged to have the potential for environmental gain, a certifying institution uses a "cradle-to-grave" approach to establish the environmental burden of products in the product group. If this study suggests that the environmental gain will be significant, proposed award criteria for the product groups are discussed in a hearing with involved parties. The Stichting Milieukeur then decides whether to adopt the product category and its associated criteria. Product categories are reviewed every one to three years, and have been updated based on new technologies and changes in manufacturing processes.

Once the criteria for the product category are approved and published, individual manufacturers and importers may submit a product for individual certification to a certifying institution. If a product meets specifications, the certifying institution awards the applicant the use of the logo and signs a contract. All of these processes are confidential. An initial fee of 1,000 guilders ($505 US) is collected, and then an annual fee of 1.5 percent of sales of the product is required for use of the certification. Products are audited every 12 months by the certifying institution to ensure compliance.

Program Methodology

As mentioned above, manufacturers, consumer groups, trade associations, or any other interested party can submit a request for the creation of a new product category to the Stichting Milieukeur. Product categories are evaluated on their potential environmental impacts. Once product categories are chosen, product criteria are developed using a life-cycle-analysis approach. The Stichting Milieukeur does follow SETAC guidelines in its life-cycle assessment.

When selecting product categories and developing criteria, the Stichting Milieukeur takes into account information from literature and studies relating to the product category , as well as other programs' previous life-cycle-analysis findings. The Stichting Milieukeur also may conduct its own independent testing and studies, and will also obtain information pertaining to the product category from participating producers. In developing its award criteria, the entire "cradle-to-grave" of a product's life cycle is taken into account and the product is assessed in terms of: the impacts of raw material extraction and processing, the manufacturing of the product, transportation and distribution of the product, the product uses as well as its potential for re-use, recyclability, wastes during disposal, the product ingredients, and, finally, the environmental performance during the production process.

Other Information

One of the more unique aspects of the Stichting Milieukeur is that it established award criteria for several food categories, including fruits, meats, dairy products, vegetables, and grains. To date, the Stichting Milieukeur is the only environmental labeling program that has established criteria for food as well as non-food categories. They made this decision based on the results of a study that indicated a need for labels on food products.

Although the government uses environmentally-labeled products for procurement on an informal basis, the Stichting Milieukeur is not involved in any formal arrangements with government or retailer procurement programs. Retailers do not preferentially select environmentally-labeled products, but do respond to consumer demand.

The Stichting Milieukeur is a Competent Body in the EU environmental labeling program. They are aware of and employ ISO standards, though these standards do not now play a strong role in the program's activities. They are not a member of GEN.

The Stichting Milieukeur reports that it actively works toward transparency and harmonization. It has a formal arrangement with Scandinavia's Nordic Swan and Germany's Blue Angel, two of the more developed programs. The three programs share ideas and jointly develop criteria for products (for example, toner cartridges and chain oils), allowing for more efficient criteria development and operation.

References

Brenninkmeijer, Helga. Stichting Milieukeur. Personal communication with Abt Associates. Summer 1997.

Luykx, Elvira. Stichting Milieukeur. Personal communication with Abt Associates. Summer 1997.

Stichting Milieukeur, *The Dutch Ecolabel: Added Value for Products and the Environment*.

Stichting Milieukeur, Background Documents, 1996.

Product Categories (number of awarded products in parentheses)

Final Product Categories

Adhesive label
Automatic car-wash
Board and card games
Bottom organic household waste bin
Car care products

Cat litter (18)
Central heating systems
Chain forms
Chairs (1)
Cleaning and product recycling of industrial gloves
Clothes
Coffee filters
Coffee makers
Copying paper (6)
(Concrete) Pavement tiles
Envelopes
(Smooth) floor covering
Footwear
Furniture (with the exception of chairs and other seating)
"Green Funds"
Hand dryers (paper)
Hand dryers (cotton)
Handshowers
Offset cleaning agents
Offset paper
Paints
Personal computers
Ring binders/organizers (5)
(Other) seatings with exception of chairs
Refrigerators
Television sets
Toilet paper (2)
Toilet chemicals
Toner cartidges
Window products (curtains, etc.)
Writing materials (1)
Writing paper (17)
Apple/pear (1)
Barley/beer
Bread (3)
Flowers and pot-plants
Mushrooms
Onions
Pepper (1)
Porcmeat
Potatoes (30)
Sprouts, leek, broccoli, cauliflower, headed cabbage, carrot, strawberry
Sugarbeet

Tomato, cucumber, courgette, aubergine, melon
Wheat (1)

Categories Under Development

Duvets/pillows
Carpets
Chain oil
Other concrete paving products
Paint cleaners
Dairy products
Meat
Sugar

NEW ZEALAND'S ENVIRONMENTAL CHOICE

Introduction

New Zealand officially started Environmental Choice New Zealand, a voluntary seal-of-approval program, on July 10, 1990. The stated objectives of the program are: to provide an incentive for manufacturers and importers to reduce the environmental impacts of products sold in New Zealand; to recognize the genuine actions by companies to reduce the adverse environmental impacts of their products; to provide a clear, credible and independent guide to consumers wishing to take account of environmental factors in their purchase decisions; to encourage consumers to purchase goods that have lower environmental impacts; and, ultimately, to improve the quality of the environment and to encourage the sustainable management of resources. Product category criteria have been published for 18 product categories. They are all currently under review. Revised criteria are expected to be published toward the end of 1997.

Recent Changes

There has been a significant change in the organizational structure of New Zealand's environmental labeling program. On July 1, 1997, Telarc (the Testing Laboratory Registration Council, or the Council) New Zealand, the organizational body administering the environmental labeling program, was restructured. A new separate company with its own Board of Directors, Telarc Limited, was established to provide all certification services. The accreditation activities are now operating under a new trading name, International Accreditation New Zealand.

Program Summary

Environmental Choice New Zealand is administered by the Testing Laboratory Registration Council (the Council) under a formal memorandum of agreement with the Minister for the Environment. The Council's operational unit, International Accreditation New Zealand, is the New Zealand accreditation authority for laboratories and inspection bodies, and manages Environmental Choice New Zealand. The Council is a statutory body which operates independently on a user-paid, non-profit basis.

The Environmental Choice Management Advisory Committee (ECMAC) is an independent committee appointed to advise the Council on the operation of the program. ECMAC includes individuals appointed to provide broad representation from manufacturing, retailing, packaging, environmental, academic, and consumer interests. ECMAC also includes a representative from the Ministry for the Environment.

ECMAC is responsible for choosing suitable product categories for Environmental Choice New Zealand. Once ECMAC has decided upon a product category, it sets up a Task Group specific to that product category to develop criteria. After the Task Group has completed a draft of the criteria specifications, ECMAC releases the document for public comment. The public comment period

lasts for at least 60 days. The Task Group's responses to these comments are not made available to the public; only the background papers on product specification developments are made accessible to the public. The Task Group then takes these comments and revises the Specification, after which the document is referred to ECMAC. ECMAC, in turn, recommends the requirements to the Council. The Council then decides whether to approve the specification for publication.

Product suppliers, which may include manufacturers, importers, wholesalers, and retailers, may apply for a license to use the Environmental Choice New Zealand label as soon as a product category specification has been published. A life-cycle approach is used to analyze whether the product satisfies the criteria. Environmental Choice New Zealand may require product testing performed by an accredited laboratory, and/or examination of the relevant manufacturing records to verify that a product meets the product category specification. If the Environmental Choice assessor is satisfied that a particular product complies with the requirements, the applicant is granted a license to use the program's label. Applicants pay an application fee ($1000), and, if a product is accepted, an annual licensing fee as well. Licensing fees are calculated on a sliding scale depending on the sales volume for that product, and run between $1,000 and $5,000.

License holders are subject to payment of fees and continued compliance, which is monitored by Environmental Choice New Zealand throughout the period. Licenses are renewed annually. Environmental Choice New Zealand gives license holders notice before revising product category specifications and 12 months, if necessary, to adjust to new requirements. As of January 1997, three companies have been granted licences. These licenses cover over 50 separate paint and carpet products.

Program Methodology

ECMAC is responsible for choosing suitable product categories for Environmental Choice New Zealand. A Task Group is then set up by ECMAC for each product category to develop criteria. In choosing product categories, the environmental impacts of the potential categories, stakeholder votes and advice from ECMAC, and suggestions from producers are all taken into account. A life cycle approach is used to analyze whether the product satisfies the criteria, which takes into account every stage of the product's life cycle, from "cradle-to-grave." Factors such as raw material use, product uses, recyclability, potential for reuse, product ingredients, and environmental performance of the production process are all taken into consideration. Similar to other environmental labeling programs, Environmental Choice New Zealand also uses literature, other programs' LCAs, independent testing and studies, and participating producer's suggestions when developing their product criteria. Finally, Environmental Choice New Zealand uses generic environmental impact assessments in developing its criteria. It does not, however, follow SETAC guidelines in its LCA.

Other Information

Because Environmental Choice New Zealand uses a sliding scale of licensing fees, it is able to accommodate the needs of small and medium sized businesses.

In setting up Environmental Choice New Zealand, the government wanted to ensure that the program be credible, practical, independent, nonpartisan, and comparable to other programs such as Canada's Environmental Choice Program. To harmonize and coordinate with other programs, Environmental Choice New Zealand has aligned its procedures with the requirements of: the ISO 14020 and ISO 14024 guidelines; the Global Ecolabeling Network guidelines; and the World Trade Organization, Technical Barriers to Trade Agreement, Code of Practice. Product criteria developed by other programs are considered when Environmental Choice New Zealand product specification documents are prepared. Additionally, Environmental Choice New Zealand is in the process of exploring specific opportunities to recognize local conditions, such as regulatory requirements, affecting other labeling programs as well as products manufactured outside New Zealand.

Environmental Choice New Zealand reports that it has not had any trade conflicts to date.

References

Environmental Choice New Zealand. *Published Specifications*. July 1997.

Environmental Choice New Zealand. *Schedule of Fees - 1997/8.*

Heinke, Gary W. et. al. *Final Report: Development of an Eco-label Certification Programme for Hong Kong/ RC96-19*. Hong Kong: Research Centre of the Hong Kong University of Science and Technology, June 1996.

Russ, Marje. International Accreditation New Zealand. Personal Communication with Abt Associates. September 1997.

Product Categories (number of awarded products in parentheses)

Final Categories

- Zinc air batteries
- Carbon zinc batteries
- Lead acid batteries
- Recycled plastic products
- Laundry detergents
- Machine dishwashing detergents
- Hand dishwashing detergents
- Re-refined lubricating oil

Paints (41)
Fine papers
Newsprint and derived products
Sanitary paper products
Moulded paper products from recycled paper
Macerated paper products from recycled paper
Recycled papers
Wool pile carpets (14)
Wool-rich pile carpets

SINGAPORE'S GREENLABEL

Introduction

The Ministry of the Environment (ENV) in Singapore launched its ecolabeling program, the "GreenLabel," in May 1992 to "promote green consumerism" among Singapore's citizens. The GreenLabel was formed as part of Singapore's "Green Plan," which is the country's overall environmental management plan. The GreenLabel is a voluntary seal-of-approval program and is open to both Singaporean and foreign companies that meet the specified product criteria. According to the Ministry of the Environment, the GreenLabel is designed to raise consumer awareness of products that exert comparatively fewer impacts on the environment, and to raise environmental awareness in general. In addition, the GreenLabel is designed to provide an incentive for "manufacturers to account for the environmental impact of their products, and to design and supply environmentally benign products" (Ong, 1997).

Singapore's GreenLabel program cites several measures as evidence of its success in increasing environmental awareness among consumers. In a 1994 survey of 1,600 households, 50 percent of respondents said that they recognized the GreenLabel. Of these, 78 percent recognized the GreenLabel as a signature of environmentally preferable products. A significant number of those surveyed said that they would pay up to 10 percent more for environmentally preferable products. Thirty percent of those surveyed said that they consider a product's environmental attributes as part of their purchasing decision process.

When the GreenLabel program began in 1992, award criteria were released for only five product categories. As of June 1997, the program covered 26 product categories broadly classified into ten product groups. As of March 1997, 702 products carry the GreenLabel. These products are produced by 137 different manufacturers.

Recent Developments

The GreenLabel program reports that since the program's inception in 1992, it has adopted the methodology for determining award criteria as outlined below. The program reports that there have been no significant changes in this methodology since the program began.

Program Summary

The GreenLabel program is administered by the Environmental Health Department under the Ministry of the Environment. The ENV Secretariat receives proposals for new product categories from the public and industry. In addition, it is the Secretariat that receives and processes applications for the GreenLabel from manufacturers, collects fees, responds to inquiries about the program from the public and applicants, produces newsletters on the GreenLabel program, and provides information about the program to the media.

Draft product criteria are developed by separate Technical Workgroups (one for each product category) consisting of experts with knowledge of the manufacture, distribution, usage, and disposal of products in the category under consideration. Once draft product criteria have been developed by the Technical Workgroup, an Advisory Committee, consisting of representatives from industry, academia, statutory organizations, and environmental groups, assists the Secretariat in endorsing the most appropriate product criteria for the GreenLabel. These draft criteria are released to the public and industry for comment.

As well as being peer reviewed, the public and industry have a 30-day period in which to provide comments on the draft product criteria. The Secretariat collects these comments and forwards them to the Advisory Committee for review and consideration. The finalized criteria are forwarded to the Approving Board (consisting of senior staff members from the Ministry of the Environment) for final approval. Although the public comments and the Advisory Committee's responses are not published, once approved, the Secretariat publishes the final criteria and manufacturers are then allowed to apply for the GreenLabel.

Manufacturers with products that meet the specified product criteria are equally eligible to apply for the GreenLabel. Applicants are given application kits that lay out the terms and conditions for product approval and for the use of the GreenLabel. Compliance with the final criteria are verified through quality control and production record checks, as well as testing of sample products in accredited laboratories. An approved product is granted a license to carry the GreenLabel logo for three years. Product criteria are reviewed every three years in order to keep up with the latest technological developments associated with the product category. If major revisions to the product criteria are made at this time, manufacturers may be required to have their products re-tested to ensure that they comply with the revised criteria.

The GreenLabel is open to both domestic and foreign manufacturers wishing to become eco-certified in Singapore. This is especially important for Singapore, since the majority of products available in Singapore are manufactured overseas. As a result, it is important for ENV to encourage and convince foreign manufacturers to apply for and use the GreenLabel on their products before shipping them to Singapore. Foreign companies often employ agents or distributors in Singapore to work with them to apply for the GreenLabel. The Ministry of the Environment has made suggestions that an international and/or regional body should be set up to initiate information exchange and to promote methods of mutual recognition; however, a formal proposal of this nature has not been made.

ENV bears all the administrative costs of the program so fees are kept low in an effort to encourage as many manufacturers as possible to apply for the GreenLabel. If a company applies for certification of a product within one year of the date of release of the final criteria for that product category, it does not pay any fees for the first five years. If the application is made a year or more

after the release of the final criteria, fees are waived for a period of only three years. Other than the certification fees, most of which are waived, the manufacturer is required to pay for product testing.

Program Methodology

When the ENV Secretariat receives proposals for product categories, it determines their suitability for the GreenLabel by evaluating the environmental impacts of the categories. Once product categories are selected, award criteria are drafted. Award criteria are based on a simplified life-cycle assessment, which assesses the environmental impacts of the "few most important parameters" for each product category. Instead of examining every impact that a product exerts on the environment, from cradle-to-grave, the Singapore program isolates and studies the most important environmental concerns for the country. For example, products may be assessed on their potential impact on water and energy resources, since Singapore is not self-sufficient in either of these areas. Or the assessment may be based on solid waste disposal impacts, since Singapore has very limited solid waste disposal capacity. Award criteria may also based on literature and environmental studies on the product categories' impacts on the environment, other programs studies and award criteria, previous life-cycle assessments that may have been conducted by other programs, and participating producers' input and knowledge about the product categories. Additionally, the product use, its ability to be recycled, and its ingredients are considered when developing award criteria.

Other Information

Singapore's Ministry of the Environment intends to review the GreenLabel criteria once the International Standards Organization's (ISO) 14020 standards for ecolabeling are finalized. However, the Ministry, does not believe that the GreenLabel scheme will undergo major restructuring based on its review of the current ISO 14020 draft documents.

The GreenLabel program is non-revenue-generating; therefore, media promotion of the program is done on a relatively limited basis. The major form of promotion for the program is actually through the manufacturers themselves. Manufacturers who apply for the ecolabel are required to use it on their certified products. Licensees' advertisements are the main vehicle for spreading the word about the GreenLabel. Advertising promotes the manufacturer's products as being environmentally preferable, adding value to the products, and is of benefit for the program. ENV also publishes *The Resource Conservation Bulletin*, which provides regular updates on the program. The GreenLabel is also promoted during Singapore's annual "Clean and Green Week" held in schools and youth fairs.

References

Dr. Peck Thian Guan, Deputy Director, Environmental Technology Centre, Singapore Productivity and Standards Board. Personal communication with Abt Associates. July, 1997.

Mr. Alvin Ong, Ministry of the Environment. Personal communication with Abt Associates. August, 1997.

Ministry of the Environment, *"Make the GreenLabel Your Choice: A Guide to the Singapore Green Labelling Scheme.*

Ministry of the Environment, *Resource Conservation Bulletin*, July, 1996.

Dr. Peck Thian Guan and Mr. Tan Choon Seng, *The Singapore Eco-Labelling Scheme*, January/February, 1997

Product Categories

Final Categories

Stationary Paper
Hygiene Paper
Printing Paper
Office Automation Paper
Carbon-zinc battery
Alkaline battery
Compact fluorescent lamp (integral)
Compact fluorescent lamp (modular)
Standard laundry powder detergent
Concentrated laundry powder detergent
Laundry liquid detergent
Dishwashing detergent
Floor cleaner
Washing machine
Correction fluids/tapes
Hair-spray/gel/mousse
Deodorant sticks/rollers/spray
Shaving foams and creams
Computer system unit
Computer monitor
Computer system with 'built-in' monitor
Precast concrete products ()
Bricks (made from waste or recycled materials)
Tiles/Ceramics (made from waste or recycled materials)

Solar cell powered calculators
Solar cell powered watches

Categories Under Consideration

Air conditioners
Refrigerators
Freezers

SPAIN'S AENOR - MEDIO AMBIENTE

Introduction

The Medio-Ambiente ecolabeling program in Spain was developed in 1993 by the Spanish Association of Standardization and Certification (AENOR). AENOR, a privately-run organization, acts as the Competent Body for awarding the European Union ecolabel in Spain (as part of the EU scheme). AENOR is a member of the Global Ecolabeling Network (GEN) and participates in the development of the International Standards Organization (ISO) ecolabeling standards. The program is voluntary, and aims to promote the production of environmentally preferable products and to provide information about the environmental impacts of available products. To date, criteria have been set for three product categories: paints and varnishes, polyethylene bags for waste, and polyethylene bags for the supermarket. In total, 14 labels have been awarded for positive environmental attributes.

Recent Developments

Spain's ecolabeling program has changed little in its first three years of operation. Its rates of product category definition and award criteria development are, however, increasing. Product groups for which criteria development is very close to being completed include: paper products, solar plates for solar lighting, photocopy machines, and cleaning products for cars. Additionally, AENOR is working on criteria for vacuum cleaners, TVs, glass materials, tiles, and wood/metal transporting materials.

AENOR notes increased retailer interest. With the growing interest of retailers in Spain's ecolabel, this area could develop in the near future. Because the program is fairly new, however, associations with procurement programs, either formal or informal, have not been developed.

Program Summary

Product groups and criteria are suggested by manufacturers and consumers and are selected by AENOR based on market studies. They are then forwarded to the AENOR Environmental Certification Technical Committee. This committee is composed of members of interested parties, including manufacturer associations, consumer associations, ecological groups, test laboratories, and control and inspection bodies. The criteria are then developed and approved by the Committee. Criteria are reviewed every three years. AENOR reported that any interested party may participate throughout the entire process.

Once award criteria are established, applicants may submit an application to the AENOR environmental division. AENOR audits the applicant and sets up testing by an accredited laboratory (selected by the Spanish Accreditation Body). If the review is favorable, the application is passed on to the Environmental Certification Technical Committee. If there are no objections, the Committee approves the application and awards the label. All application information is kept

confidential until an award is given, when applicant information becomes public. The applicant is responsible for an initial fee of about $700, which includes all testing and audit fees. Once awarded use of the label, the applicant then pays 0.1 percent of its annual sales to AENOR, as well as the fees for an annual compliance audit (the cost of this audit depends on the size of the producer's facilities).

Program Methodology

A life-cycle analysis is conducted for each potential product group, taking account of impacts from raw materials selection to product disposal.

Other Information

AENOR is sensitive to small and medium sized businesses, as reflected in its percentage-based fee system, which allows companies with smaller sales to incur smaller ecolabeling costs. In fact, the majority of products currently labeled in Spain are manufactured by small companies.

As mentioned above, AENOR is a member of ISO and GEN, and is the Competent Body for the EU. AENOR bases its criteria on ISO standards and is a participating member in continuing standard development. It believes that GEN is a very good organizing body, especially for increasing the role of mutual recognition in ecolabeling. With GEN offices in Sweden, Japan, and the US, AENOR feels that GEN has strength in an international forum. In an effort to increase coordination among programs, AENOR is participating in a study conducted by the Danish Environmental Protection Agency about European ecolabels.

According to AENOR, the organization has not encountered any trade issues or conflicts.

References

AENOR, *AENOR-Medio Ambiente Eco-Label.*

Tejera Oliver, Jose Luis, AENOR. Personal communication with Abt Associates. Summer 1997.

Product Categories

Final Categories

Paints and varnishes
Polyethylene bags for waste
Polyethylene bags for supermarkets

Under Development

Paper products, including envelopes and folders
Solar plates for solar light
Photocopy machines
Cleaning products for cars
Vacuum cleaners
Televisions
Glass materials
Tiles
Wood/metal palates for transporting materials

SWEDEN'S GOOD ENVIRONMENTAL CHOICE

Introduction

Sweden's Good Environmental Choice program was founded in 1990 by the Swedish Society for the Conservation of Nature (SSNC), Sweden's largest environmental organization. The environmental certification program is private, positive, and voluntary, and has evolved into a product and shelf labeling program from what was originally a guide to environmentally sound shopping published by the Society in 1988. In 1989, the Swedish Cooperative Federation (KF), one of Sweden's largest retailers, initiated a shelf labeling program that encouraged the purchase of goods recommended by the Society's guide. By the end of 1989, the two other largest Swedish retailers, ICA and Dagab, joined with KF in sponsoring an ecolabeling scheme that became the Good Environmental Choice Program.

Good Environmental Choice has criteria for 17 product categories and has approved 1,139 products to date.

Program Summary

The Society for the Conservation of Nature administers the Good Environmental Choice program, although some of the program functions are performed by the Board of the program. The Board is composed of three representatives from the Society for the Conservation of Nature (one of whom is the chairman with a casting vote), as well as three trade representatives (one from each of the sponsoring retailers).

The Board is responsible for selecting the product categories.

The Society for the Conservation of Nature develops criteria for each product category. Criteria are based on single attributes. The Society does not attempt to perform a life cycle analysis (LCA) to determine product criteria because it believes that unequivocal judgments, upon which LCA is based, are not possible, even given "unlimited time and resources." For this reason, the program has decided to concentrate its efforts on "things that can be changed now." The criteria are written and approved independently of the Board, although in this process the Society may consult universities, public authorities, and occasionally private businesses.

To have a product approved by the Good Environmental Choice program, manufacturers must declare the ingredients of their products to the Society. In certain cases, more information is required, such as the emissions of a product during production. Instructions of the required information are available from the Society. Approved products are included in the register of Good Environmental Choice products that is published by the Society, and are also identified by program shelf labels in supermarkets of the three retailer sponsors. Because costs are borne by the Society and the participating retailers, manufacturers are not required to pay a fee to have their products listed in the register or displayed on the Good Environmental Choice shelves. A

manufacturer may also choose to print the Good Environmental Choice falcon logo on their product, in which case they must apply for a licence from the Society and pay a fee of SEK 5000 (US$664) for the first product, and SEK 1500 (US$200) for any additional products.

Program Methodology

The Good Environmental Choice program selects product categories and qualifying criteria. After analyzing a resource impact matrix for a particular product category, the most important aspect (e.g., bleaching for paper products) is identified as the basis of the criteria. The program does not attempt to perform a life-cycle assessment (LCA).

Other Information

The Swedish Society for Nature Conservation began working in 1992 with the Swedish Confederation of Professional Employees (TCO), the National Board for Industrial and Technical Development in Sweden, and SEMKO (a tester and certifier of electrical products), to develop environmental labels for personal computers. The goal of the labeling program is to influence technical developments in the field of information technology, as well as make it easier for companies to choose good equipment from the environmental standpoint. The first stage of the program development created TCO'92, a label for computer monitors. The more recent program, TCO'95, provides a label for complete personal computers (monitors, system unit, and keyboards). The label for used for TCO'95 shows the falcon emblem from the Swedish Society for Nature Conservation.

References

Swedish Society for Nature Conservation. *Bra Miljöval; Products approved as Good Environmental Choice*. 18 June 1996.

Swedish Society for Nature Conservation. *Good Environmental Choice; Environmental Criteria.* 24 May 1996.

Swedish Society for Nature Conservation. *Good Environmental Choice; Environmental Criteria for [various product categories]*. 1995.

TCO, Swedish Confederation of Professional Employees. *TCO'95 Certification; Requirements for environmental labelling of personal computers*. Second Edition. Stockholm, Sweden. 12 April 1995.

TAIWAN'S GREEN MARK PROGRAM

Introduction

The Green Mark Program was launched in 1992 by Taiwan's Environmental Protection Administration as a voluntary and positive ecolabeling program. The mission of the Green Mark is to "promote the concept of recycling, pollution reduction, and resource conservation." The program is currently administered by the Environment and Development Foundation (EDF), a private institution.

The objectives of the Green Mark are to guide consumers in purchasing "green" products, and to encourage manufacturers to design and produce them. The Green Mark expects to meet these goals through the following steps: selecting "environmentally benign" products to meet domestic demands; developing criteria; encouraging the public to consume Green Mark products, which will in turn stimulate their production; and participating in international activities such as ISO and GEN.

As of September 1997, The Green Mark Program had developed criteria for 41 product categories (two more are nearly complete) and had certified 451 products. Of the current 102 licensees (companies with one or more certified product), four are foreign-based -- two from the United States, one from Indonesia, and one from Singapore. These foreign-based licenses are for mercury-free batteries, detergent, and water-saving cisterns.

Recent Developments

Until recently, the Industrial Technology Research Institute (ITRI) acted as the Implementation Body of the Green Mark program; however, it was replaced by the Environment and Development Foundation (EDF). EDF was created for the following reasons. First, because ITRI provides consulting services for both the Environmental Protection Administration (EPA) and the Ministry of Economic Affairs (MOEA) and is considered their "technical arm," it is viewed by the public as a government-funded private organization. In contrast, it is hoped that EDF will be viewed as a more impartial, private organization. Second, the EPA hopes to gradually decrease its control and funding of the Green Mark program; it is anticipated that independent operation will help the program to become self-sufficient over the next five years. Third, because EDF is independent, it can be more flexible than ITRI in international cooperation activities. In the future, ITRI will give both technical and administrative assistance to EDF.

The effectiveness of the Green Mark Logo in the marketplace is unclear. The Logo is reported to be well known within the industrial sector, and many manufacturers are enthusiastic about applying for it. They would like to see the program expand the number of product categories. Among licensees surveyed, nearly 80 percent reported that the Logo is helpful for their company image, and 72 percent said it is helpful for promoting business. Despite these positive veiws,

several non-profit environmental groups are unsatisfied with the Green Mark Logo's low visibility among consumers. A 1996 ITRI survey shows that only 40 percent of the general public recognize the Logo, and only 30 percent of them report having bought labeled products.

Program Summary

The Green Mark is overseen by Taiwan's EPA and managed by EDF. The program is reviewed by the Review Committee, which has representation from the government, non-governmental organizations, academia, and other stakeholders. Other groups involved in the process are the manufacturers who receive the Green Mark Logo, and stakeholders such as manufacturers associations and consumer and environmental groups.

As the managers of the Green Mark Program, EDF is responsible for selecting product categories. To do so, it performs an annual survey of experts, industrial associations, and NGOs. EDF also collects information on product criteria, criteria scope, the major environmental concerns, and sometimes test methods, from foreign ecolabeling programs. Among the attributes considered during the review of proposed product categories are: threat to environmental quality; cannot be replaced by an existing "environmentally benign" product category (e.g. mercury-containing batteries can be replaced by mercury-free batteries); have less environmental impact than similar products; and cannot have any adverse effects on health and safety of humans. In addition, there must be a sizable number of domestic and foreign manufacturers. Proposed categories must be approved by the Review Committee.

EDF is also responsible for developing product criteria. The development process follows three guiding principals:

1. Product criteria should take into consideration Taiwan's local environmental conditions by accounting for such problems as insufficient water and electricity supply, and a landfill shortage, by including Green Mark criteria for low water and/or electricity use, or products that produce less pollution.
2. Between twenty and thirty percent of manufacturers must be able to meet the criteria with "reasonable" process modifications.
3. Criteria are compared with criteria from other ecolabeling programs.

Non-environmental attributes are addressed generally; it is the responsibility of manufacturers to be in compliance with environmental and "other related regulations," such as quality, safety, and industrial hygiene. As an example, the criteria for "Compost" cites the Council of Agriculture's specific regulation on compost regarding functional characteristics, among other things. Proposed criteria are submitted to a technical group convened for each product category. Criteria are announced at public hearings with manufacturers, government agencies, and experts. Finally, the proposed criteria are approved by the Review Committee. EDF usually develops six product criteria every year.

EDF is currently in the process of redesigning the product criteria review process. The Review Committee consists of 21 members with very diverse opinions, and decision-making has become difficult. Furthermore, the group meets only once every two months to review the product criteria. A smaller committee is under consideration to ease meeting logistics and to reach consensus decisions more quickly.

To be considered for the Green Mark Logo, manufacturers must provide documentation about both the company in general, as well as the specific product. Importers can apply for the Green Mark Logo if they can certify that they have had no significant environmental performance problems during the year prior to the application date. Documentation must include test reports completed by accredited laboratories on all quantifiable and measurable requirements in the criteria. Applicants must also submit signed statements regarding other qualitative or nonmeasurable requirements, for example, certification that a particular chemical was not used in the product's formulation. EDF reviews the submitted documents from manufacturers, conducts an audit, samples and inspects the product, makes a recommendation for award, and monitors the use of the Green Mark Logo. [5] The Review Committee is responsible for awarding the Logo. The award is valid for two years, and the licensee may re-apply, following all requirements set forth in the guidelines. No licensee has ever failed to qualify upon renewal.

Although it is the responsibility of the licensee to ensure that they remain in compliance with Logo requirements, EDF conducts a follow-up site test with a random 20 percent of the licensees. EDF also performs on-site investigations when EPA notifies them of a possible label misuse. Another way that the Green Mark Program ensures that the label is used correctly is through market sampling on the part of non-governmental organizations, as well as EDF and ITRI staff. EDF reports that most instances of misused labels have been in advertising.

Currently, EDF collects only an application fee from applicants, although it plans to begin collecting annual fees next year. The application fee is approximately US$715 for new applications, and approximately US$535 for renewals. The Green Mark program's funding is mainly from the EPA. Its budget increased from $70,000 in the initial years to $363,000 in the past four years, and is expected to be $500,000 in fiscal year 1997.

The number of products approved for the Green Mark Logo has increased over the years, with the exception of a significant drop in 1996 when the category "products using CFC substitutes" was discontinued. This category was no longer necessary when all products in it, such as refrigerators and air conditioners, changed to CFC substitutes. Products bearing the Logo are not only purchased by retail consumers, but by industry as well. Industrial products include cement, insulation material, and bricks. According to the Program Director, Taiwan should have a

[5] EDF can invite experts and scholars to assist with product inspections.

"Government Procurement Policy" within the next few years, which would require government agencies to buy Green Mark products or products with equivalent environmental attributes. Taiwan will give a "price preference" of 10 percent for such products, meaning that the government will pay up 10 percent more for a product with specific environmental attributes.

Program Methodology

The Green Mark program is beginning to incorporate the concept of life-cycle assessment (LCA) into its product criteria development. Taiwan adopted LCA because ISO 14204 requires that Type I ecolabeling programs use "Life Cycle Consideration" when developing product criteria. This approach differs from the early stages of Green Mark's product criteria development, when criteria were often simple and based on one attribute, such as a preference for cloth diapers because they reduced inputs into the solid waste stream. Because of the complexity of LCA, however, the Green Mark program uses only simplified LCA techniques, using the matrix in ISO 14024 to make qualitative judgments regarding the environmental attributes associated with each product. As an example of the simplified LCA approach, when the criteria were developed for compact fluorescent lamps, the following attributes were considered: the amount of mercury discharged upon disposal, the level of electricity conserved, the volume of waste lamps disposed, and the nature and quantity of toxic materials used in the manufacturing process.

When selecting product categories, EDF evaluates environmental impacts of potential categories, uses a political process of voting, and selects categories when producers come forward voluntarily. The following have been considered in the development of product criteria: extracting and processing raw materials, manufacturing, transportation and distribution, product uses, reuse, recycling, final disposal, and ingredient or materials restrictions. The development process includes collecting information from literature, other programs, and participating producers. Proposed criteria are peer reviewed, but the critiques are not available to the public. The Green Mark Program does not conduct an impact assessment, but does follow SETAC guidelines.

Other Information

The program is accessible to all small and medium sized businesses, and although the Program does not have a program to encourage their participation, half of the licensees are small or medium sized.

Taiwan is an active member of GEN and is working closely with other ecolabeling programs on ISO draft standards. In addition, Taiwan has finalized a mutual recognition agreement with TerraChoice in Canada. One problem encountered during the negotiations was that Green Mark requires recycled content tissue paper to be 100 percent domestically recycled. To facilitate the agreement, "domestically" was deleted from the standard. Taiwan is also working with TerraChoice on establishing a mutual recognition framework and process. The goal is to establish a system that "enables reciprocal acceptance of tests, inspections, conformity assessment, administrative procedures, and, where appropriate, environmental criteria." According to the

March 97 issue of *GENews*, such a system would include a set of guiding principals incorporating international trade agreements and ISO standards, and would deal with transparency and open access, as well as mutual confidence and respect; flexibility to deal with "different ecosystem sensitivities, products, values, priorities and marketplaces in different countries;" and cooperation mechanisms.

In an effort to expand the awareness of the Green Mark Program, the program participated in the five-day National Environmental Protection Week held in January 1997. The Green Mark booth exhibited products bearing the Green Mark Logo. It received over 200,000 visitors during the exhibition. On a more regular basis, the Program educates the public about new product criteria by way of announcing them in the newspaper, distributing a quarterly journal to over 3,000 industrial and governmental sector recipients, and posting updates on its Internet Web site (http://www.greenmark.itri.org.tw).

References

Yu, Ning, Ph.D. Environment and Development Foundation, Taiwan, ROC. Personal communication with Abt Associates. Summer 1997.

Global Ecolabel Network. *GENews.* March 1997.

Green Mark Program, Taiwan, ROC. [Online: Web]. Updated 26 March 1997, cited 10 September 1997. URL: http://www.interchg.ubc.ca/ecolabel/taiwan.html

Industrial Technology Research Institute. *Green Mark; The Environmental Labelling Program in Taiwan, Republic of China*. January 1996.

Industrial Technology Research Institute. *List of Green Mark Product Categories*. 30 June 1997.

Green Mark Program, Taiwan, ROC. [Online: Web]. Cited 10 September 1997. URL: http.//www.greenmark.itri.org.tw

Product Categories (number of awarded products in parentheses)

Final Categories

Products made from recycled plastic or waste rubber (15)
Office use papers from recycled paper (2)
Toilet papers from recycled paper (1)
Stationery papers from recycled paper (33)
Packaging papers from recycled paper (41)
Portland blast furnace cement (3)
Thermal insulation materials for building (5)
Mercury-free batteries (15)

Products using solar energy battery
Cloth diapers (1)
Water-based paints (13)
Products made from recycled wood (6)
Products using substitute for CFCs [dropped] (82)
Beverage cans with stay-on tab (39)
Refilling pouch (4)
Single flush cisterns (96)
Personal computers (2)
Monitors (16)
Printers
Reusable shopping bags (2)
Electric motorcycles
Compact fluorescent lamps
Washing machines (29)
Laundry detergents (1)
Dish-washing detergents for handwash
Non-bleached towels
Dual-flush water saving cisterns (2)
Household refrigerators and freezers (30)
Household air conditioners (13)
Compost (1)
Building Material Made from Recovered Wastes (1)
Agricultural-use products from degradable plastics (new)
Packaging-use products from degradable plastics (new)
Sanitary products from degradable plastics (new)
Consumer products from degradable plastics (new)
Non-asbestos friction material (new)
Tooth Brushes with Replaceable Heads (new)
Glow Starter for Fluorescent Lamps (new)
Water-saving Faucets/Devices (new)
Water Conserving Dual-flush Cistern Retrofit Devices (new)

Guidelines Under Development

Shower heads
Stabilizers

THAILAND'S GREEN LABEL SCHEME

Introduction

The Thai Green Label Scheme was initiated by the Thailand Business Council for Sustainable Development in October 1993. It was formally launched by the Thailand Environmental Institute (TEI) in association with the Ministry of Industry in August 1994. The scheme awards as seal of approval to products meeting its criteria, and is voluntary in nature.

The program was developed with three objectives in mind: to provide reliable information and guide customers in their product choices; to create an opportunity for consumers to make environmentally conscious decisions and thus create a market incentive for manufacturers to supply environmentally sound products; and to reduce environmental impacts that occur during manufacture, use, consumption and disposal of products. To date, the program has developed product criteria for nine product groups. The Green Label has been awarded to 41 products to date in seven of the nine product categories.

Recent Developments

The program reports that it has not undergone any significant changes since its inception.

Program Summary

The Thai Green Label is composed of several committees. The Thai Green Label Board is the overarching entity responsible for making all major decisions, including deciding on basic strategies, selecting product groups for consideration, deciding on criteria, deciding on the structures and levels of fees, and deciding on supporting activities. Its members are appointed by the Minister of the Ministry of Industry.

The Board is supported by two groups: the Technical Subcommittee and the Secretariat (TEI and The Thai Industrial Standards Institute-TISI). The Technical Subcommittee develops proposals including product criteria, test methods, and the requirements for applicants. A new subcommittee is established for each product category, composed of experts from relevant institutes, industry, and environmental groups. The Secretariat organizes meetings and prepares materials to be discussed by the Board.

The general public presents proposals for product groups to the Secretariat, which are then submitted to the Board. Once the Board decides on the product categories, it sets up a technical subcommittee to work on the criteria. The Secretariat is then responsible for submitting the final proposal to the Board, which decides on the criteria and announces the decision to the public. The criteria are developed on the basis of a life-cycle review and are reviewed every two years. The draft criteria are made available to the general public upon request. The public can provide comments on the draft criteria. Responses and critiques to these comments are not published.

Once award criteria have been set, product applications are accepted. TEI examines applications to make sure that all criteria are met, and then passes them along to TISI for further investigation. Once criteria fulfillment has been determined, TEI registers the application and enters into a contract with the manufacturer. An application fee of 1,000 Baht ($29 US) is collected from the applicant, and then another fee of 5,000 Baht ($144 US) is collected once the product has been awarded the label. TEI is responsible to ensure that the label is not misused.

Program Methodology

When choosing product categories, the Green Label uses "life-cycle-considerations" which evaluate products based on their environmental impacts at each stage of the product's life-cycle. Additionally, a political process and stakeholder and legislative body votes are used to chose product categories. When product categories are selected, the product criteria are drafted.

Information for draft criteria are obtained from independent studies and testing, participating producers, and other programs' previous LCAs. In fact, the Green Label maintains contact with ecolabeling programs in Singapore, the EU, and Japan, and have adopted some of these programs' criteria in establishing its criteria. Criteria take into account product uses, potential for reuse, potential for recycling, ingredients, resource use, and wastes generated during final disposal.

Other Information

The Thai Green Label program is accessible to both small and medium sized business. The Thailand Industrial Standards Institute is a member of ISO, and a representative attends ISO meeting on a regular basis. The Green Label program maintains contact with the German, Singapore, EU and Japan ecolabeling programs. Germany has, in fact, helped them to form their program. The program does not report any trade conflicts to date, with regard to the Green Label. Thailand is not a member of GEN.

References

Green Label Thailand. Product Category Summary. July 1997.

Green Label Thailand. *A Guide to the Thai Green Label Scheme*. August 1997.

Heinke, Gary W. et. al. *Final Report: Development of an Eco-label Certification Programme for Hong Kong/ RC96-19*. Hong Kong: Research Centre of the Hong Kong University of Science and Technology, June 1996.

Product Categories

Final Categories

Products made from recycled plastics
Energy-saving fluorescent lamps
Environmentally sound refrigerators
Low-pollutant emulsion paints
Water-economizing flushing toilets
No mercury-added dry-cell batteries
Recycled paper
Low-energy air conditioners
CFC-free sprays

Guidelines Under Consideration

Environmentally sound detergents
Energy-saving motors
Water-economizing closing faucets
Products made from non-bleached cloth